CITY COUNCIL OF SINGAPORE

ANNUAL REPORT OF THE
HEALTH DEPARTMENT 1953

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1954

ANNUAL REPORT OF THE
HEALTH DEPARTMENT 1953

BY

N. A. CANTON, M.B., CH.B., B.A.O., D.P.H.,
City Health Officer

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CONTENTS

	Page
REPORT OF THE CITY HEALTH OFFICER . . .	1
ANTI-MOSQUITO DEPARTMENT	25
CHEMICAL LABORATORY	36
BACTERIOLOGICAL LABORATORY	47
MATERNITY AND INFANT WELFARE DEPARTMENT . .	52
MIDDLETON HOSPITAL	56
MARKETS	62
ABATTOIRS	66
SANITARY INSPECTORS SECTION	68

HEALTH DEPARTMENT

WHEN READING this report and appendices it must be borne in mind that the rates quoted are uncorrected for 'inward' or 'outward' transfers unless otherwise stated; that patients from outside the town entering hospitals and other institutions providing medical facilities in the town adversely affect our Death and Infectious Diseases rates; that the age and sex distribution of our population is still abnormal; and that the number of deaths shown as due to the various diseases must necessarily be inaccurate, as something like 25 per cent of the persons who die in Singapore have had no medical advice or treatment before death, and the causes of their deaths have had to be surmised by Inspecting Officers without the aid of clinical observations or autopsies.

MID-YEAR POPULATION

The Registrar of Statistics' figure for our estimated mid-year population, on which the statistics in the appendices are based is shown by races in the table which follows:—

ESTIMATED MID-YEAR POPULATION BY RACES 1953

Malaysians	85,504
Chinese	623,958
Indians and Pakistanis	62,281
Europeans	10,462
Eurasians	9,406
Others	9,093
Total	800,704

Details concerning notifiable infectious diseases, vital statistics, etc. and the work carried out by the various sub-departments are set out in appendices as follows:—

A—Notifiable Infectious Diseases.
B—General measures to combat spread of Infectious Diseases—Vaccination, etc.
C—Birth and Still-birth Statistics.
D—General Death Rate, Infant Mortality Rate, Neo-natal Rates, etc., Principal Causes of Death, Death by whom certified.
E—Markets, Food, Licences Issued, Abattoirs, Burial Grounds;

and in the appended reports and returns of:—

Anti-Mosquito Department.
Analyst.
Bacteriologist.
Infant Welfare Department.
Superintendent, Middleton Hospital.
Market Inspector.
Superintendent, Abattoirs.
Chief Sanitary Inspector.

SUMMARY OF PRINCIPAL STATISTICS, 1953:—

Births and Death Rates etc.—all races combined

Total births registered	39,322
Total deaths registered	8.936
Excess of births over deaths	30.386
Birth Rate	49.11
Death Rate	11.16
Malaria Death Rate	0.041
Infantile Mortality Rate	71.54
Neo-natal Rate	36.85
Still-birth Rate per 1,000 live and still-births	18.55
Maternal Mortality Rate per 1,000 live-births	1.27

DEATHS BY WHOM CERTIFIED

	1952 *Per cent*	*1953* *Per cent*
Medical Practitioners	63.30	66.63
Inspecting Officers	25.90	22.99
Coroner	10.80	10.38

NOTIFIABLE INFECTIOUS DISEASES IN 1953

	Cases Notified		*Deaths*
Tuberculosis (all forms)	2,911	(including 580 non-residents)	868
Typhoid	121	(including 32 non-residents)	11
Paratyphoid	3	(including 1 non-resident)	—
Diphtheria	341	(including 96 non-residents)	56
Leprosy	179	(including 55 non-residents)	1
Poliomyelitis	45	(including 15 non-residents)	5
Small-pox, Cholera, Plague	Nil	Nil	Nil

DEATHS CERTIFIED AS DUE TO SOME OF THE NON-NOTIFIABLE INFECTIOUS AND PARASITIC DISEASE IN 1953

	1952	*1953*
Dysentery—Bacillary	4	8
Unspecified	18	14
Amoebic	20	21
Malaria	38	33
Influenza	29	41
Whooping Cough and complications	7	1
Measles and complications	14	12
Lepto-spirosis (Weil's Disease)	4	3
Tetanus	42	51

NON-NOTIFIABLE INFECTIOUS DISEASES TREATED AT THE MIDDLETON HOSPITAL IN 1952 AND 195

	1952	*1953*
Measles and Rubella	151	117
Whooping Cough	3	7
Amoebic Dysentery	92	134
Bacillary Dysentery	22	25
Clinical Dysentery	9	16

VACCINATION

Age Group (0–1)	29,218
Age Group (1–5)	1,055
Age Group (5 and over)	100
Total Vaccinated and Revaccinated	30,373

MATERNITY AND INFANT WELFARE DEPARTMENT HOME VISITS BY SISTERS AND HEALTH VISITORS

	1952	1953
Mothers visited by District Sisters within 10 days of confinement	21,520	21,834
Visits by Health Visitors to individual new babies ..	28,639	30,225
Subsequent visits by Health Visitors to new babies ..	57,317	58,969
Visits to expectant mothers	2,129	4,138
Visits made in connection with anti-diphtheria immunization	2,802	3,757
Total visits to homes by Sisters and Health Visitors ..	112,387	118,923

ATTENDANCES AT CLINICS

	1952	1953
Infants (0–1)		
1st attendances	17,720	19,625
Subsequent attendances	85,020	103,316
Total attendances ..	102,140	122,941
Pre-school Children		
1st attendances	—	6,380
Subsequent attendances	—	5,302
Total attendances ..	27,215	11,682
Expectant Mothers		
1st attendances	2,593	2,895
Subsequent attendances	4,993	10,275
Total attendances ..	7,586	13,170

DIPHTHERIA IMMUNIZATION—COMPLETE COURSES

	1952	1953
Infants (0–1)	5,777	6,049
Pre-school children (1–5)	23,151	4,325

Of the 6,049 infants immunized at the clinics during the year 396 were mmunized against whooping cough as well as diphtheria.

COUNCIL FREE MIDWIFERY SERVICE

	1952	1953
Confinements attended by Council Midwives ..	1,211	1,364
Visits paid to cases discharged from Government Maternity Hospital three days or so after confinement ..	3,160	3,233
Visits subsequently paid to known cases of confinement not attended by Doctors or Midwives	244	181

CONDUCTION OF CONFINEMENTS

	1952	1953
Government Maternity Hospital	15,059	17,692
Private Maternity Homes and by Private Doctors ..	3,950	3,269
Private Midwives	15,001	15,879
Council Midwives	1,211	1,364
No skilled attention at confinement	1,614	1,464
	36,835	39,668

HEALTH OF STAFF

AVERAGE STRENGTH OF JUNIOR, SUBORDINATE AND OPEN VOTES STAFF STATIONED IN SINGAPORE IN 1953

*(*a*) Approximate number of junior and subordinate staff stationed in Singapore including temporary staff paid out of 'Extra Clerical and Technical Assistance Votes' but excluding females	2,227
†(*b*) Approximate number of Open Vote employees stationed in Singapore excluding females and juveniles	8,363

*Figure obtained by Assistant Secretary (Establishments) from Departments.

†Figure obtained from Welfare Officer.

———	Staff (*a*)	Open Votes (*b*)	Total (*a*) and (*b*)
New cases attended at dispensaries	5,297	35,884	41,181
Total attendances including first visits at dispensaries ..	10,624	87,205	97,829
Examinations for physical fitness	470	869	1,339
Visits paid to homes by M.O. i/c Staff	49	31	80
Cases treated by Private Doctors	1,545	4,916	6,461
Days sick leave granted including special T.B. leave by:—			
(*a*) M.Os. i/c Staff	10,471	80,663	91,134
(*b*) Private Practitioners	4,545	19,706	24,251
(*c*) Hospitals	3,651	14,284	17,935
Total ..	18,667	114,653	133,320
Days special T.B. leave granted	516	4,802	5,318
Average number of days sick leave including T.B. leave granted per male person employed in Junior, Subordinate and Open Votes Staff and Temporary Staff in 1953	8.38	13.7	12.6

The points of special interest or importance in connection with the working of the Department during the year were as follows:—

TYPHOID

Eighty-nine cases of Typhoid in City residents were reported during the year as against 136 in the previous year.

No carrier or other source of infection was traced which could account for any of the cases notified during the year.

DIPHTHERIA

Two hundred and forty-five cases in City residents were reported during the year as against 352 in 1952 and 392 in 1951. Undoubtedly the immunization of some 30,000 infants and toddlers during the intensified anti-diphtheria campaign which was run with some little success from August—October 1952 was at least partially, if not mainly, responsible for the slight reduction in the number of cases notified during the year.

Experience elsewhere has shown that diphtheria as a cause of disease and death can be virtually eliminated by the adequate immunisation of the greater bulk of the infant population between 6 months and 1 year of age, preferably soon after they have reached the age of 6 months, followed later by a further injection to boost their immunity when they have reached the age of 5.

The number of known cases and the deaths certified as due to Diphtheria in City residents over the past few years were as follows:—

	1953	*1952*	*1951*
Cases notified	245	352	392
Deaths	56	86	102

Most of these cases and deaths from Diphtheria occurred in children under 6 years of age and most of them could have been prevented had parents followed the advice given and had their infants and children immunised against this disease.

It is to be hoped that the present Anti-Diphtheria Immunisation Campaign which started on the first of March 1954 and is still in progress will prove to be a much greater success than the previous one. In the previous campaign a relatively small number of infants and children were taken to the clinics for immunisation and since then only a very small number have been immunised.

POLIOMYELITIS

Thirty cases in residents and fifteen in non-residents were reported during the year as against forty-five and fourteen respectively in 1952.

DEATH AND INFANTILE MORTALITY RATES

The crude death rate per 1,000 of the population and the infantile mortality rate per 1,000 live births for the year were the lowest ever recorded. They were 11.16 and 71.54 respectively.

There was a marked reduction in the number of deaths certified as due to Tuberculosis (all types) and in the death rate from this disease during the year as compared with previous years. The death rate from Tuberculosis during the year was 1.08 per mille of the population (868 cases) as against a rate of 1.48 per mille (1,140 cases) in 1952 and a rate of 1.71 (1,284 cases) in 1951. There was no corresponding reduction in the number of cases of this disease notified during the year as compared with previous years.

In recent years there has been a marked decrease in the number of deaths certified as due to 'Convulsions' in infants and children and in the death and infantile mortality rates shown as due to this cause. As 'Convulsions' are a symptom of disease and not a disease the reduction in the number of deaths certified as due to this cause is very welcome—it suggests that a more accurate diagnosis of diseases in infants and children is being made today than in years gone by.

MALARIA

For some years past the incidence of and death rate from malaria in Singapore have been remarkably low. The death rates from this disease per mille of the population for the year 1948—1952 were 0.223, 0.151, 0.138, 0.072, 0.049 respectively. In 1953 the rate was 0.041.

This continued freedom from the disease within the City must not be misinterpreted to mean that malaria is no longer a potential danger in the City and that therefore there can be an easing up on the expenditure incurred in the construction of new anti-malaria works or the maintenance of existing ones.

The recent outbreak of malaria in Kuala Lipis in Pahang showed clearly what can happen if malaria control measures are relaxed.

Close to the centre of the City, in the Kallang Basin, we still have considerable difficulty in effectively controlling the large potential breeding grounds for *A. sundaicus*, which were responsible for some big outbreaks of malaria in years gone by. This is a very important point which must be taken into consideration when plans for the future development of the Kallang Basin are being finalized.

During the year further areas were brought under permanent anti-malaria control by the construction of 2,584 yards of concrete anti-malarial drains and 1,712 yards of subsoil pipe lines. In addition to this some 2,633 yards anti-malaria drains which were laid many years ago and in which the inverts were beyond repair had to be reconstructed.

VEGETABLE GARDENS IN RESIDENTIAL AREAS

On several occasions throughout the year numerous complaints were received from residents living in the Peirce Road, Swettenham Road, Kay Siang Road area, with regard to the prevalence of flies in their homes and district.

In each and every case the flies were found to be breeding in large numbers in manure (mostly prawn dust and pig dung) which had been used on vegetable beds by the vegetable squatters cultivating the vacant land in the vicinity of the complainants' houses, just inside and outside the City—Rural Board Boundary.

Everything that could be done, was done to reduce the fly breeding in the vegetable beds, without doing any more damage to the crops than could possibly be avoided.

As, in practice, it is difficult or well nigh impossible to effectively control fly breeding in vegetable beds without destroying or damaging the crops, the present position in the Peirce Road and other similar suburban areas where residential development and vegetable gardening are still to be found side by side must continue to remain most unsatisfactory both from the point of view of the residents and the vegetable gardeners, so long as things must be allowed to remain as they are.

The Health Department has always expressed the view that vegetable gardening, as practised in Singapore, and residential development are absolutely incompatible not only because of the periodic fly and smell nuisances which emanate from the various types of manure stored or used in such gardens but also because the squatters who run them frequently create suitable breeding grounds for mosquitoes, sometimes dangerous malaria carrying types, by the opening up of wells and/or blockage of anti-malaria drains to obtain water supplies for their vegetables, and/or by the damage caused to anti-malaria drains or subsoil pipes by their cultivation activities or their pigs.

INFANT WELFARE DEPARTMENT

The work carried out by this sub-department continues to increase. 118,923 visits to homes of mothers and infants were made by Sisters and Health Visitors during the year as against 112,387 in 1952. 19,625 new infants were seen at the clinics in the course of the year as against 17,720 in the previous year and the total number of attendances of infants at the clinics was 122,941 as against 102,140 in 1952.

As a result of two big fires which occurred in the Geylang area during the year many of the families who lost their homes had to be rehoused in temporary camps, one at a godown in Lorong 3 and the other at the new Badminton Hall. A large number of the inmates in these camps were infants, toddlers and nursing mothers. The staff of the Infant Welfare Department was called upon to give a hand in organizing the feeding and care of these infants, toddlers, and mothers until such time as they could be dispersed and provided with alternative accommodation. As a precautionary measure, all of the infants and children in one of the camps were immunised against Diphtheria.

INSANITARY KAMPONGS

The erection during and since the Japanese regime of a large number of unauthorized plank and attap huts, built to no organized layout, with no proper means of drainage or access for removal of nightsoil and refuse has created serious sanitary problems in many areas in the City which will take many years to clear up.

During the year the Council very wisely decided 'that all unauthorized building operations commenced after 1st July, 1953 for the purpose of erecting attap type or temporary houses be dealt with according to the provisions of Section 144 of the Municipal Ordinance and demolition action enforced irrespective of whether the building is or is not occupied at the time of such demolition and that this decision be widely publicized.'

This decision of the Council was welcomed by the Health Department as since the occupation, the continued extension of the existing insanitary kampongs and the erection of new ones has been a source of much concern to the Department.

I take this opportunity of recording my grateful thanks to all members of the department both senior and junior for their continued loyal support.

N. A. CANTON, M.B., CH.B., B.A.O., D.P.H.,
City Health Officer.

APPENDIX *A*

Table 1

NOTIFIABLE INFECTIOUS DISEASES

The number of cases notified in persons who were stated to be ordinarily resident within the City area in 1953 and in the previous five years are shown in the table which follows:—

Year	1948	1949	1950	1951	1952	Average for 5 years	1953
Small-pox	5	..	..	..	..	1.0	..
Plague	..	..	..	..	..	..	..
Cholera	..	..	..	..	..	..	..
Typhoid Fever	70	61	129	85	136	96.2	89
Paratyphoid Fever	2	1	..	1	2	1.2	2
Diphtheria	193	241	224	392	352	280.4	245
Cerebro Spinal Fever	11	11	6	5	5	7.6	5
Typhus Fever*	16	24	13	15	16	16.8	9
Scarlet Fever	..	..	..	..	..	..	1
Leprosy	121	158	180	142	95	139.2	124
Poliomyelitis	120	54	72	60	45	70.2	30
Anthrax	..	..	..	..	..	..	..
Puerperal Fever	38	53	82	69	78	64.0	43
Erysipelas	13	20	10	8	16	13.4	15
Chicken-pox	329	402	466	594	413	440.8	713
Tuberculosis	4,078	4,247	3,684	3,219	2.990	3,643.6	2,911
Total ..	4,996	5,272	4,866	4,590	4,148	4,774.4	4,187

* Under the heading of Typhus are included Tsutsugamushi or Scrub Typhus of Malaya (Mite Borne) and Flea Borne, Urban Type Tropical Typhus, Louse Borne Typhus has not been seen in Singapore.

Table 2

NOTIFIABLE INFECTIOUS DISEASES BY RACES FOR THE YEAR 1953

Race	Europeans	Eurasians	Chinese	Malays	Indians	Others	Total
Typhoid Fever	— (—)	1 (—)	74 (26)	9 (1)	5 (5)	— (—)	89 (32)
Diphtheria	1 (—)	2 (2)	214 (90)	23 (1)	5 (3)	— (—)	245 (96)
Chicken-pox	3 (—)	34 (5)	262 (37)	82 (17)	327 (94)	5 (—)	713 (153)
Puerperal Fever	— (—)	— (—)	19 (1)	21 (—)	3 (—)	— (—)	43 (1)
Poliomyelitis	3 (4)	— (—)	22 (8)	2 (2)	3 (1)	— (—)	30 (15)
Cerebro Spinal Fever	— (—)	— (—)	4 (1)	— (—)	1 (1)	— (—)	5 (2)
Tuberculosis	2 (1)	13 (6)	2,543 (470)	147 (53)	200 (46)	6 (4)	2,911 (580)
Paratyphoid Fever	— (—)	— (—)	2 (—)	— (—)	— (1)	— (—)	2 (1)
Small-pox	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)
Leprosy	— (—)	— (1)	101 (49)	4 (3)	19 (2)	— (—)	124 (55)
Typhus Fever	— (—)	— (—)	3 (4)	— (—)	6 (1)	— (—)	9* (5)†
Erysipelas	— (—)	— (—)	12 (—)	— (—)	3 (—)	— (—)	15 (—)
Scarlet Fever	— (—)	— (—)	1 (—)	— (—)	— (—)	— (—)	1 (—)
Total	9 (5)	50 (14)	3,257 (686)	288 (77)	572 (154)	11 (4)	4,187 (940)

The figures not in brackets are of cases notified in persons ordinarily resident in the City area.

The figures in brackets are imported cases and cases from Rural Board treated in hospitals or institutions in the City area but not ordinarily resident in the City area.

* 7 flea borne and 2 mite borne.

† 1 flea borne and 4 mite borne.

Table 3

NOTIFIABLE INFECTIOUS DISEASES BY MONTHS FOR THE YEAR 1953

(Figures in brackets are cases in non-residents)

——	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Typhoid Fever	7	4	6	7	9	6	14	8	2	9	10	7	89
	(4)	(1)	(5)	(4)	(1)	(3)	(1)	(—)	(2)	(4)	(4)	(3)	(32)
Diphtheria	31	33	27	18	15	9	13	17	17	13	22	30	245
	(9)	(6)	(6)	(7)	(7)	(13)	(6)	(6)	(10)	(6)	(8)	(12)	(96)
Chicken-pox	79	92	54	48	48	55	50	66	46	73	55	47	713
	(29)	(11)	(6)	(6)	(17)	(9)	(9)	(13)	(17)	(13)	(9)	(14)	(153)
Puerperal Fever	3	1	2	6	4	2	3	—	5	7	7	3	43
	(—)	(1)	(—)	(—)	(—)	(—)	(—)	(—)	(—)	(—)	(—)	(—)	(1)
Poliomyelitis	3	1	2	2	2	1	8	1	1	1	2	6	30
	(—)	(—)	(—)	(—)	(—)	(1)	(5)	(—)	(1)	(1)	(—)	(1)	(15)
Cerebro Spinal Fever ..	—	1	—	—	—	1	—	—	—	3	—	—	5
	(—)	(—)	(—)	(—)	(—)	(—)	(1)	(—)	(1)	(—)	(—)	(—)	(2)
Tuberculosis	225	202	234	254	215	243	283	222	291	269	237	236	2,911
	(42)	(38)	(53)	(46)	(37)	(42)	(60)	(46)	(56)	(53)	(48)	(59)	(580)
Paratyphoid Fever ..	1	—	—	—	—	—	—	1	—	—	—	—	2
	(—)	(1)	(—)	(—)	(—)	(—)	(—)	(—)	(—)	(—)	(—)	(—)	(1)
Leprosy	2	5	14	14	12	13	11	8	14	14	9	8	124
	(3)	(3)	(3)	(8)	(5)	(5)	(5)	(8)	(3)	(8)	(1)	(3)	(55)
Typhus Fever	—	—	2	2	—	—	2	1	—	1	—	1	9 *
	(—)	(—)	(—)	(1)	(—)	(—)	(—)	(2)	(—)	(—)	(—)	(2)	(5)†
Small-pox	—	—	—	—	—	—	—	—	—	—	—	—	—
	(—)	(—)	(—)	(—)	(—)	(—)	(—)	(—)	(—)	(—)	(—)	(—)	(—)
Erysipelas	2	1	1	1	—	1	1	—	2	1	3	2	15
	(—)	(—)	(—)	(—)	(—)	(—)	(—)	(—)	(—)	(—)	(—)	(—)	(—)
Scarlet Fever	—	—	—	—	—	—	—	—	1	—	—	—	1
	(—)	(—)	(—)	(—)	(—)	(—)	(—)	(—)	(—)	(—)	(—)	(—)	(—)
Total ..	353	340	342	352	305	331	385	324	379	391	345	340	4.187
	(87)	(61)	(75)	(74)	(69)	(73)	(87)	(75)	(90)	(85)	(70)	(94)	(940)

* 7 flea borne and 2 mite borne.

Table 4

POLIOMYELITIS

CONFIRMED CASES NOTIFIED IN 1953 BY RACE, SEX AND AGE GROUPS

Table includes imported cases as well as cases in City Residents

(Cases in Service Personnel and Families included)

Age	EUROPEANS			EURASIANS			CHINESE			MALAYS			INDIANS			OTHERS			TOTAL		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
0— 5 years	—	1	1	—	—	—	15	9	24	3	1	4	2	2	4	—	—	—	20	13	33
5—10 ,, ...	—	—	—	—	—	—	2	—	2	—	—	—	—	—	—	—	—	—	2	—	2
10—15 ,, ...	—	—	—	—	—	—	1	1	2	—	—	—	—	—	—	—	—	—	1	1	2
15—20 ,, ...	—	—	—	—	—	—	1	—	1	—	—	—	—	—	—	—	—	—	1	—	1
20—25 ,, ...	3	—	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3	—	3
25—35 ,, ...	2	1	3	—	—	—	1	—	1	—	—	—	—	—	—	—	—	—	3	1	4
35—45 ,, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
45—55 ,, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total ..	5	2	7	—	—	—	20	10	30	3	1	4	2	2	4	—	—	—	30	15	45

Fifteen of the forty-five confirmed cases of Poliomyelitis notified within the City area were non-residents.

Table 5

POLIOMYELITIS CASES NOTIFIED AND CONFIRMED IN 1953

UNDER 5 YEARS OF AGE BY RACE, SEX AND AGE GROUPS
(Resident and non-resident)
(Cases in Service Personnel and Families included)

Race	0—1 year		1—2 years		2—3 years		3—4 years		4—5 years		Total under 5 years	Total over 5 years
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		
Europeans	—	—	—	—	—	—	—	1	—	—	1	6
Eurasians	—	—	—	—	—	—	—	—	—	—	—	—
Chinese	6	4	3	2	3	2	1	—	3	—	24	6
Malays	1	—	1	—	1	1	—	—	—	—	4	—
Indians	1	2	1	—	—	—	—	—	—	—	4	—
Others	—	—	—	—	—	—	—	—	—	—	—	—
Total ..	8	6	5	2	4	3	1	1	3	—	33	12

Table 6

PERCENTAGE OF PARALYTIC AND NON-PARALYTIC POLIOMYELITIS CASES TREATED AT MIDDLETON HOSPITAL 1952 AND 1953

	1952	*1953*
Total cases treated at Middleton Hospital ..	78	41
Paralytic cases	73	40
Non-Paralytic cases	5	1
Paralytic cases	93.5%	97.5%

Table 7

NOTIFICATIONS OF TUBERCULOSIS (ALL TYPES) BY SEX AND AGE GROUPS 1953

(in City residents only)

Sex	AGE GROUPS							
	0–5 years	5–10 years	10–15 years	15–20 years	20–45 years	Over 45 years	Age not stated	Total
Males	91	11	15	98	1,162	734	8	2,119
Females ..	110	15	12	52	591	210	2	792
Total ..	201	26	27	150	1,753	944	10	2,911

Table 8

INSTITUTIONS, ETC. WHENCE TUBERCULOSIS NOTIFICATIONS WERE RECEIVED

2,911 cases of Tuberculosis (all types) in City residents and 580 in non-residents, that is 3,491 in all, were notified during the year. 43 of these were not ordinarily resident in the Colony:—

Notified by	R.S.T.C.	T.T.S. Clinic	General Hospital	Total R.S.T.C. and Hospitals	Private Practi-tioners	Total
Number of cases notified	1,528	674	432	2,634	857	3,491

APPENDIX B

Table 1

GENERAL MEASURES TAKEN TO PREVENT IMPORTATION AND SPREAD OF INFECTIOUS DISEASES

PASSENGERS UNDER SURVEILLANCE DURING THE YEAR 1953

Number of Passenger Undertakings received ..	142
Number of Persons under surveillance	204
Number of Persons seen	189
Number of Persons not seen and could not be traced	15

Table 2

HOUSES QUARANTINED, DISINFECTED, AND INFECTIOUS CASES REMOVED TO INFECTIOUS HOSPITAL, TRAFALGAR HOSPITAL

Houses quarantined	Nil
Houses Disinfected	1.289
Infectious cases removed to Infectious Hospital ..	1,021
Leper cases removed to Trafalgar Hospital	166

Table 3

VACCINATIONS BY CITY VACCINATORS, MEDICALMEN, PRIVATE AND GOVERNMENT VACCINATORS
1953

——	Successful	Modified	Failed	Not Seen	Total
City Vaccinators ..	17,195	84	103	1,392	18.774
Medicalmen	11,171	..	12	8	11,191
Private and Government Vaccinators ..	407	..	..	1	408
Total ..	28,773	84	115	1,401	30,373

Table 4

VACCINATION BY RACES 1953

Race	Under 6 months	6–12 months	1–5 years	Over 5 years	Total
Chinese	15,162	7,981	937	81	24.161
Malays	2,298	1,082	63	9	3.452
Indians	1,361	552	35	4	1.952
Eurasians	169	46	8	4	227
Europeans	44	15	2	..	61
Others	450	58	10	2	520
Total ..	19,484	9,734	1,055	100	30,373

APPENDIX *C*

Table 1

BIRTHS AND STILL-BIRTHS

The following is the number of births for each month of the year, the 1952 figures being also own:—

Month	1952	1953	Month	1952	1953
anuary	2,804	3,088	July	3,225	3,421
ebruary	2,774	2,838	August	3,054	3,262
arch	2,763	3,060	September ..	3,276	3,472
pril	2,951	3,130	October ..	3,377	3,621
ay	2,876	3,059	November ..	3,185	3,468
ne	2,993	3,394	December ..	3,251	3,509
Total ..	17,161	18,569	Total ..	19,368	20,753

Table 2

The Births Registered by Races were:—

——	1952			1953		
	Males	Females	Total	Males	Females	Total
ropeans	125	127	252	137	139	276
rasians	167	162	329	193	163	356
nese	14,780	14,073	28,853	16,106	14,970	31,076
lays	1,978	1,864	3,842	2,098	1,964	4,062
lians	1,616	1,481	3,097	1,728	1,659	3,387
ers	73	83	156	90	75	165
Total ..	18,739	17,790	36,529	20,352	18,970	39,322

Table 3

The birth rate for each race in 1953 and the corresponding rates for 1952 are shown in the table ch follows:—

———	1952	1953
opeans	25.57	26.38
asians	36.02	37.85
ese	47.78	49.80
ays	46.46	47.51
ians	54.24	54.38
ers	18.06	18.15
Races Combined	47.36	49.11

Table 4

The table which follows shows the number of live-births by race and sex that occurred at th Government Maternity Hospital in 1953 and also the percentage of the total registered live-birth of each race born at this hospital:—

—	1953			Percentage of total births registered by race born at the Government Hospital	
	Males	Females	Both Sexes	1953	1952
Chinese	7.525	7,012	14.537	46.78	42.95
Indians	1,099	1,043	2,142	63.24	55.76
Malays	116	122	238	5.86	5.57
Europeans	111	116	227	82.25	87.70
Eurasians	108	91	199	55.90	48.63
Others	20	16	36	21.82	12.82
Total All Races ..	8,979	8,400	17,379	44.20	40.34

Table 5

The percentage of the total births registered by races in the census years, 1911, 1921, 1931. 194 and in 1948–1953 is shown in the table which follows:—

Year	Total Births	Chinese	Malays	Indians	Other Races	Percentage of Total Birth			
						Chinese	Malays	Indians	Other Races
1911 ..	5,560	3,750	1,051	406	353	67.4	18.8	7.3	7.52
1921 ..	10,237	7,789	1,270	640	538	76.0	12.4	6.2	5.26
1931 ..	16,488	13,229	1,758	917	584	80.23	10.66	5.56	3.54
1936 ..	20,878	17,093	1,842	1,314	629	81.87	8.82	6.29	3.01
1947 ..	30,548	24,247	3,233	2,323	745	79.3	10.5	7.6	2.44
1948 ..	32,074	25,996	3,004	2,299	775	81.1	9.4	7.2	2.4
1949 ..	33,101	26,602	3,294	2,461	744	80.4	10.0	7.4	2.2
1950 ..	33,424	26,700	3,408	2,635	681	79.88	10.20	7.88	2.04
1951 ..	34,776	27,686	3,542	2,819	729	79.61	10.19	8.11	2.10
1952 ..	36,529	28,853	3,842	3,097	737	78.99	10.52	8.48	2.02
1953 ..	39,322	31,076	4,062	3,387	798	79.03	10.33	8.61	2.03

Table 6

The Still-births registered in 1953 and 1952 are shown in the table which follows:—

—	1953			1952		
	Males	Females	Total	Males	Females	Total
Europeans	2	3	5	..	..	..
Eurasians ..	1	4	5	4	5	9
Chinese	278	224	502	281	222	503
Malays	70	51	121	54	38	92
Indians	47	55	102	49	53	102
Others	3	5	8	4	4	8
Total ..	401	342	743	392	322	714

APPENDIX D

Table 1

DEATHS

The following return shows the number of deaths and the death rate for each month of the year:—

Month	No. of Deaths	Death Rate	Month	No. of Deaths	Death Rate
anuary	697	10.26	July	705	10.37
ebruary	674	10.98	August	859	12.64
larch	757	11.14	September	763	11.60
pril	746	11.34	October	735	10.82
lay	785	11.55	November	718	10.92
une	781	11.88	December	716	10.54

Table 2

The chief causes of death in 1952 and 1953 and the rate per 1,000 living are set out in the table hich follows:—

—	1952		1953	
	Cases	Rate per Mille	Cases	Rate per Mille
onchitis and Pneumonia	1,637	2.122	1,526	1.91
berculosis	1,140	1.478	868	1.08
arrhoea and Enteritis	1,132	1.468	963	1.20
seases of early infancy	759	.984	927	1.16
antile Convulsions (up to 5 years)	318	.412	248	0.31
lence	469	.608	464	0.58
art Disease	498	.646	489	0.61
Age	305	.395	308	0.38
cer	420	.544	519	0.65
phritis	310	.402	255	0.32
i-Beri	271	.351	164	0.21
htheria	86	.111	56	0.07
aria	38	.049	33	0.04
enteries	42	.054	43	0.05
hoid	12	.016	11	0.01

Table 3

MORTALITY ACCORDING TO RACES AND AGES, 1953

—	Europeans		Eurasians		Chinese		Malays		Indians		Others		Total Males	Total Females	Grand Total
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.			
Under 28 days	1	3	10	6	637	513	83	67	61	52	6	10	798	651	1,449
28 days to 3 months	..	..	3	1	177	158	56	53	23	11	2	1	261	224	485
3–12 months	2	..	2	1	310	278	118	97	35	34	2	..	469	410	879
1–2 years	..	..	3	..	175	180	56	50	10	14	..	..	244	244	488
2–3 years	1	..	..	1	102	106	18	27	7	11	..	..	128	145	273
3–4 years	1	..	..	..	71	68	9	14	8	8	2	2	91	92	183
4–5 years	..	..	..	..	49	49	8	9	3	7	..	..	60	65	125
5–10 years	..	..	..	..	96	85	9	13	11	7	..	..	116	105	221
10–15 years	..	..	..	1	35	39	7	5	1	2	..	1	43	48	91
15–20 years	..	1	..	..	59	37	6	10	11	4	..	1	76	53	129
20–25 years	1	..	1	..	60	46	12	12	14	6	..	..	87	64	151
25–35 years	8	3	1	2	155	119	24	37	45	17	1	1	234	179	413
35–45 years	4	3	2	2	361	203	28	36	92	10	1	..	488	254	742
45–55 years	4	1	5	3	594	279	45	31	76	14	4	2	728	330	1,058
55 Over	11	5	15	17	1,107	784	93	74	96	30	6	10	1,328	920	2,248
Unknown	..	..	..	..	1	..	..	..	..	..	..	..	1	..	1
Total ..	33	16	42	34	3,989	2.944	571	535	493	227	24	28	5,153	3,783	8,936
Grand Total ..	49		76		6,933		1,108		720		52		8,936		

Table 4

INFANTILE MORTALITY BY RACES 1938–1953

(Occupation Period 1942–1945 omitted)

Year	Europeans	Eurasians	Chinese	Malays	Indians	Others	All Races
1938	16.3	58.5	178.9	235.6	128.9	98.9	177.4
1939	39.4	79.6	150.3	188.4	91.6	96.9	147.7
1940	31.9	77.9	162.6	209.9	111.8	104.2	160.7
1941	21.6	48.6	152.5	211.6	102.8	143.6	152.4
1942–1945		(Japanese Occupation Period)					
1946	28.2	65.5	91.6	140.4	94.9	126.6	96.39
1947	52.0	84.3	93.4	144.1	81.8	109.9	97.6
1948	28.0	45.3	83.9	163.1	80.0	67.0	90.10
1949	19.3	38.7	74.3	122.7	82.1	109.5	79.18
1950	18.9	53.0	87.4	145.8	71.3	65.9	91.22
1951	21.7	41.1	73.7	130.4	68.5	158.2	78.79
1952	35.7	45.6	71.0	120.8	64.9	102.6	75.34
1953	21.7	64.6	66.7	116.7	63.8	127.3	71.54

Table 5

The main causes of death in infants and the rate per 1,000 live-births for each disease in 1953 and 1952 are set in the table which follows:—

——	1953		1952	
	Cases	Rate per Mille	Cases	Rate per Mille
Convulsions	179	4.55	220	6.023
Bronchitis and Pneumonia	639	16.25	656	17.958
Diseases of early infancy	927	23.57	759	20.504
Diarrhoea and Enteritis	666	16.94	749	20.504
Tetanus	20	0.51	18	.493
Beri-Beri	38	0.97	20	.548
Congenital Syphilis	26	0.66	27	.739
Total	2,495	63.45	2,449	67.043

Table 6

1953 INFANTILE MORTALITY ACCORDING TO RACE, SEX AND AGE GROUPS

—	Age Groups	0–1 Day	1–7 Days	1–4 Weeks	0–4 Weeks	4 Weeks–3 Months	3–6 Months	6–9 Months	9–12 Months	0–12 Months
Europeans	M.	..	1	..	1	..	1	1	..	3
	F.	2	1	..	3	..	..	..	..	3
Eurasians	M.	4	3	3	10	3	2	..	..	15
	F.	2	1	3	6	1	1	..	..	8
Chinese	M.	139	179	319	637	177	122	96	92	1.124
	F.	114	137	262	513	158	109	85	84	949
Malays	M.	24	30	29	83	56	51	40	27	257
	F.	22	22	23	67	53	34	36	27	217
Indians	M.	16	19	26	61	23	15	11	9	119
	F.	10	12	30	52	11	15	13	6	97
Others	M.	1	3	2	6	2	1	1	..	10
	F.	4	5	1	10	1	..	..	..	11
Total Races ..	M.	184	235	379	798	261	192	149	128	1,528
	F.	154	178	319	651	224	159	134	117	1,285
Combined Total ..		338	413	698	1,449	485	351	283	245	2,813

Table 7

NEO-NATAL RATES BY RACE AND SEX (1951–53)

	1953			1952			1951		
	Males	Females	Both Sexes	Males	Females	Both Sexes	Males	Females	Both Sexes
Europeans	7.30	21.58	14.49	16.00	31.50	23.81	17.24	17.54	17.39
Eurasians	51.81	36.81	44.94	17.98	30.86	21.28	32.43	12.82	23.46
Chinese	39.55	34.26	37.01	34.57	36.31	35.42	31.60	28.05	29.87
Malays	39.56	34.11	36.93	44.99	37.55	41.38	52.23	35.40	44.04
Indians	35.30	31.34	33.36	40.84	31.06	36.16	37.70	26.89	32.28
Others	66.67	133.33	96.97	54.79	84.34	70.51	120.88	59.70	94.94
Total ..	39.21	34.32	36.85	36.02	36.09	36.05	34.56	28.61	31.66

Table 8

The chief causes of the neo-natal deaths in infants in 1953 and 1952 are shown in the tabl which follows:—

——	1953		1952	
	No. of cases	% Total Neo-natal deaths	No. of cases	% Total Neo-natal deaths
1. Premature Birth	511	35.27	390	29.61
2. Congenital Debility	77	5.31	78	5.92
3. Infantile Convulsions	45	3.11	58	4.40
4. Atelectasis	95	6.56	78	5.92
5. Diarrhoea and Enteritis ..	210	14.49	248	18.83
6. Tetanus	19	1.31	16	1.22
7. Bronchitis and Pneumonia ..	170	11.73	178	13.52
8. Congenital Malformations ..	56	3.86	49	3.72
9. Icterus Neo-natorum	134	9.25	81	6.15
10. Injury at Birth	62	4.28	75	5.70
11. Beri-Beri	8	0.55	3	.23
12. Undefined or unstated causes ..	11	0.76	7	.53
13. Congenital Syphilis	13	0.90	14	1.06
14. Diseases of Umbilicus	4	0.28	8	.61
15. Other Diseases included under 161 (*c*)	10	0.69	8	.61
16. Septicaemia and Pyaemia ..	2	0.14	..	..
17. Other Diseases	21	1.45	26	1.97
Total ..	1,449		1,317	

Table 9

CERTIFICATION OF DEATHS 1953

By whom certified	Europeans	Eurasians	Chinese	Malays	Indians	Others	Total
Medical Practitioners ..	36	70	4,983	371	463	31	5,954
City Council Inspecting Officers	..	3	1,239	674	129	9	2,054
Coroner	13	3	711	61	128	12	928
Total ..	49	76	6,933	1,106	720	52	8,936

Table 10

In the table which follows are shown the percentage number of deaths the causes of which wer certified by Medical Practitioners, Inspecting Registrars and the Coroner, in the pre-war yea 1940–1941 and the post-war years 1946–1953:—

——	1940	1941	1946	1947	1948	1949	1950	1951	1952	1953
Medical Practitioners ..	68.7	68.9	57.16	58.48	60.22	59.81	58.89	59.82	63.30	66.6
Registrars ..	25.2	25.0	33.82	33.14	31.92	31.85	31.55	30.10	25.90	22.9
Coroner	6.1	6.1	9.02	8.39	7.86	8.34	9.56	10.08	10.80	10.3

APPENDIX *E*

Table 1

FOOD AND MARKETS

	1952 Weight in katties	*1953 Weight in katties*
A. Quantity of fresh fish landed and auctioned at the markets	8,716,150½	9,234,335½
B. Quantities of unsound foodstuffs at markets which were seized, surrendered and destroyed during the year:—		
Fish, Meat, Vegetables, Fruits and Miscellaneous	217,426	235,925
Eggs	18,600	15,525
Head of Poultry	3,865	5,194

C. Samples taken for chemical analysis during the year=760

Decayed and unsound foodstuffs at Godown in the Harbour Board and elsewhere and shops in the City which were seized or surrendered and destroyed during the year included 39,569 tins, 11,780 bottles, 217 packages, 2,338½ lb. of assorted provisions, and 379 katties of fish, vegetables and fruits.

Table 2

D. Licences Issued and Fees Collected.

Year	LICENCES ISSUED			Total
	Total	Food By-laws	Offensive Trades	$ c.
1952	2,223	1,821	..	80,340 00
		..	402	12,775 18
				93,115 18
1953	..	1,730	..	77,936 00
		..	405	15,408 55
				93,344 55

Table 3

THE NUMBER OF ANIMALS SLAUGHTERED AT THE ABATTOIRS IN 1952 and 1953

———	1953	1952
Pigs	327,853	320,076
Sheep	56,506	57,743
Goats	2,022	2,282
Oxen	5,568	4,248
Buffaloes	1,101	2,314
Horses	11	4
Deer	..	1
Total ..	393,061	386,668

NUMBER OF PIGS FROM VARIOUS SOURCES SLAUGHTERED AT ABATTOIR AND APPROXIMATE WEIGHT OF PORK PRODUCED IN 1952 AND 1953

—	1953		1952	
	No. of pigs slaughtered	Approximate weight katties	No. of pigs slaughtered	Approximat weight katties
Local Pigs—Average carcase weight, 55 katties	321,647	17,690,585	305,300	16,791,500
Federation Pigs—Average carcase weight, 60 katties	835	50,100	6,576	394,560
Bali Pigs—Average carcase weight, 90 katties	5,371	483,390	8,200	738,000
Saigon Pigs—Average carcase weight, 80 katties	..	..	..	..
Total ..	327,853	18,224,075	320,076	17,924,060

CARCASES TOTALLY CONDEMNED AT THE ABATTOIRS 1953

Swine	*Sheep*	*Oxen*	*Buffaloes*	*Goats*	*Total Condemned*
31	62	12	4	—	109

REVENUE

The total revenue (excluding rent received for use of Chilling Rooms) from the Abattoirs in 195 was $768,680.50. This is the highest revenue ever recorded for the Abattoirs, the previous highes being $759,019.10 in 1952.

Table 4

BURIAL GROUNDS

1953	Deaths registered within the City area	Burials and Cremations made in City Cemeteries and licensed burial grounds in the City Area	Exhumations
Europeans	49	56	..
Eurasians	76	83	..
Chinese	6,933	4,675 (5)	39
Malays	1,106	673	..
Indians	720	1,314 (175)	..
Others	52	57 (5)	..
Total ..	8,936	6,858 (185)	39

Figures in brackets denote number cremated.

ANTI-MOSQUITO DEPARTMENT

INCIDENCE OF MALARIA

Seventy-two cases of malaria were reported from hospitals and dispensaries during the year. Of these fifty-six gave addresses within the City and were fully investigated. With the exception of nine, who gave wrong addresses they were found to be either imported cases or relapses.

TRAPPING OF ADULT MOSQUITOES

The three mosquito traps set up in various parts of the City for the collection of adult mosquitoes for identification provided a valuable check on our control measures. For details see Appendix *A*.

LARVAE SEARCHING

5,175 collections of mosquito larvae were brought to the department by the oiling checkers for identification. As in the past, boats brought to Singapore for repairs are providing excellent breeding grounds for dangerous mosquitoes. A close watch is being kept and this year *A. sundaicus* was found breeding in seven boats undergoing repairs in the upper reaches of the Singapore River. Immediate action was taken to deal with these breeding places.

Common types of breeding places with an analysis of 1,000 consecutive larval collections is shown at Appendix *B*.

Total number of collections in which vector species were found along with their common breeding places, is shown at Appendix *C*.

PERMANENT ANTI-MALARIAL WORKS

The areas under permanent control within the City were extended by the construction of 2,584 yards of concrete anti-malarial drain and 1,712 yards of subsoil pipe line. Certain permanent anti-malarial drains were in a very bad state of repair due to age. 2,633 yards of such drains were reconstructed with new materials.

Several of our anti-malarial drains running across building lots were diverted along lot boundaries or reserve roads to suit approved layouts.

For details of permanent anti-malarial works please see Appendix *D*.

Minor repairs to existing permanent anti-malarial works were carried out as and when required and details of this are given in Appendix *E*.

PRAWN PONDS IN KALLANG BASIN

Weekly inspections continue to be carried out to ensure that sluice gates were opened and algal growths on ponds were removed. Fifty-two inspections were made and no dangerous mosquito-breeding was found in this area during the year. Sluice gates were found to be closed on three occasions during ebb-tide and the owners were cautioned.

Digging for scrap-iron at Kolam Ayer ceased during March of the year. Several of these pits were refilled by the City Cleansing Department.

KAMPONG SANITATION

The existing Kampong Sanitation drains were regularly maintained by the Kampong Sanitation Labour Force and an extension of the drainage by 153 yards was carried out in order to divert unsatisfactory drainage as a result of new huts being erected in a kampong already maintained by us. No new kampongs were dealt with during the year, but a small number of drains in connection with stand pipes or anti-malarial drains were constructed. For details of Kampong Sanitation Works, please see Appendix *F*.

MAINTENANCE

(i) Maintenance Work, carried out by ten gangs and four machine units continues on the basis of all anti-malarial areas being maintained approximately once in forty-five days as far as possible. The question of the City Cleansing Department taking over several anti-malarial drains used mainly as sullage channels is no nearer solution than it was last year and the Anti-Mosquito Department is finding it difficult to cope with the increasing burden with the existing labour force. As building development progresses more anti-malarial drains are being converted into sullage drains which require frequent cleansing for the purpose of which this department is not equipped.

(ii) New seepages were trapped underground by subsoil pipes and extensions and repairs to existing subsoil pipes were carried out. In addition 1,548 subsoil pipes were taken up, cleared and relaid.

LARVICIDAL WORKS

(i) *Anti-Malarial Mixture*—88,621 gallons of this containing 1 per cen D.D.T. were expended compared with 83,779 gallons last year. About 1/3 of this increase is accounted for by the extensive anti-fly measures and anti-mosquito measures carried out in the burnt-out areas at Lorong 3, Geylang and Lorong 25 off Upper Aljunied Road and the balance was mainly used in oiling earth drains pools etc. created in new kampongs.

(ii) *Ditrene Dip*—8,860 gallons of 3 per cent Ditrene Dip have been used mainly for control of breeding places where an oily larvicide was undesirable M/s. Shell Co. have informed us that supply of Ditrene Dip will be discontinued in 1954 and it is proposed to use Shell Malariol Emulsion which is a suitable substitute, and cheaper.

(iii) *Malariol H. S.*—193 gallons of this was used to control mosquito breeding in fish and vegetable ponds in Sungei Whampoe and Kallang Basin areas.

(iv) *Gammexane*—932 lb. of this was used in the temporary control o nuisance mosquito breeding in septic tanks, which continue to be responsible for a number of mosquito complaints received.

(v) *Kerosene with 5 per cent D.D.T.*—170 gallons of this was used mainly fo barrier spraying and spraying a godown housing fire victims at Lorong 3, Geylang

(vi) *Benzine with 10 per cent D.D.T.*—579 gallons were used to contro mosquito breeding along the margins of reservoirs.

Total cost of larvicides (including labour) was $140,762.02 and of this sum $13,468.17 was recovered from owners and contractors.

FILLING IN OF LOW-LYING AREAS

Reclamation of tidal swamps by controlled tipping at Aljunied Road and Genting Lane (Kallang Basin area) was carried out by the City Cleansing Department at the request of the Health Department. Filling of extensive swamp at the Bendemeer area was continued. By this means breeding grounds for *A. sundaicus* an important malarial vector, are being reduced.

PATROL GANGS

Five patrol gangs continued to work around the General Hospital, Tan Tock Seng Hospital, Kallang Basin, Tanjong Rhu, Siglap and Geylang Serai areas mainly to control the breeding of *A. sundaicus.* These gangs cleared and regraded 895,228 yards of earth drains and cleansed 258,629 yards of concrete drains. They also collected and disposed of an average of 7,650 large baskets of empty tins and water-bearing receptacles every month.

NOTICES

Eighty-six notices under Destruction of Mosquitoes Ordinance were served during the year as against 210 last year. This reduction in notices served does not indicate a corresponding reduction in work as oiling was continued throughout the year on many building sites for which notices had been served the previous year.

ANTI-FLY MEASURES

The oilers were called upon to carry out anti-fly measures on several occasions as a result of numerous complaints from residential areas. The cause of the fly nuisance was found to be due to prawn dust or other favourable fly breeding media in the manure used by squatters growing vegetables in adjoining kampong areas.

TRAINING

The following Probationary Sanitary Inspectors began a 3-month course in anti-malarial measures and in the bionomics and taxonomics of Malayan mosquitoes during the year.

1. Yeo Lye Watt. 2. Tan Chye Kee.

Both candidates were examined and passed. During the year, films dealing with various aspects of Malaria Control were shown to the staff and Probationary Sanitary Inspectors with the assistance of the United States Information Service.

PLANS

322 plans were referred to this department by the Planning Officer, Singapore Improvement Trust, for examination and comments regarding drainage.

A close liaison was maintained with Army and Rural Health Authorities concerned with control of mosquito breeding.

R. S. CORBITT, A.H.O. (A.M.D.),
for Deputy Health Officer.

APPENDIX

Mosquito traps were set up in the following areas with the results indicated below:—

Locality	No. of Nights	*A. maculatus*	*A. sundaicus*	Other *Anopheles*	Others	Total
Goodman Road ..	297	Nil	1	117	5,047	5,165
Kolam Ayer Lane ..	213	Nil	Nil	16	6,661	6,677
Woodleigh Park ..	80	Nil	Nil	6	2,081	2,087
Kampong Wak Tanjong	84	Nil	Nil	105	2,755	2,860
St. Michaels Road ..	217	Nil	1	314	5,196	5,511
	..	..	2	558	21,740	22,300

558 Anopheline female mosquitoes were trapped; of which 320 were dissected and none w found infected. In addition, 21,740 adult mosquitoes were identified.

APPENDIX

1,000 CONSECUTIVE COLLECTIONS FROM COMMON BREEDING PLACES

Sullage concrete drains	63
Roadside concrete drains	125
Concrete drains	96
Roadside earth drains	10
Earth drains	75
Seepage earth drain	1
New Building excavations	76
Stagnant pools	136
Grassy pools	32
Swimming pools	2
Seepages	11
Lorry tracks	19
Sewage excavations	5
Reservoir edges	8
Ponds	41
Concrete ponds	2
Concrete tanks	11
Earth wells	29
Concrete wells	2
Brick wells	3
Septic tanks	13
Concrete sump pits	2
Stop cock pits	12
Carried forward ..	774

APPENDIX *B—continued*

,000 CONSECUTIVE COLLECTIONS FROM COMMON BREEDING PLACES—*continued*

Brought forward	774
Inspection chambers for water pipes	12
Sewage manhole	1
Concrete fish tanks	2
Boats	30
Tins	88
Drums	34
Jars	27
Disused tyres	12
Iron Tanks	2
W. C. Pans	4
Hoof marks	1
Concrete holes	6
Wooden Tubs	1
Latex cup	1
Buckets	2
Holes in banana stumps	1
Tree hole	1
Yam Plant Leaves	1
Total	1,000

APPENDIX *C*

5,175 collections of mosquito larvae were brought to the laboratory for identification. Thirty-five of these contained larvae of *Anopheline sundaicus*, twelve contained larvae of *Anopheline maculatus* and two contained larvae of *Anopheline letifer*. The other 5,126 collection did not contain larvae of malaria vectors.

The types of breeding places in which the larvae of malaria vectors were found were as follows:—

A. sundaicus	
Disused boats	7
Tidal pools	5
Grassy pools	4
Tidal ponds	5
Concrete ponds	3
Swimming pool	2
Lorry tracks	3
Building excavations	3
Excavation	1
Earth drain	1
Earth well	1
	35

A. maculatus	
Borders of Estate Reservoir (G.P.)	2
Earth drains (G.P.W.W.)	2
Seepages (local 2, G.P.W.W.1)	3
Earth well	1
Swimming pool	1
Seepages earth drain	1
Roadside concrete drain	1
Anti-malarial concrete drain	1
	12

A. letifer	
Swamp in Pontian Water Works	1
Border of reservoir near main dam at Gunong Pulai W.W.	1
	2

APPENDIX *D*

NEW CONSTRUCTION WORKS CARRIED OUT

Anti-Malarial Area	MATERIALS USED											Labour Cost	Material Cost	Remarks
	Inverts					Slabs		Subsoil Pipes			Misc.			
	21″	18″	15″	12″	9″	18″	15″	8″	6″	4″		$ c.	$ c.	
7. Gleneaird ..	..	..	..	250	..	500	..	..	..	..	..	816 27	1,015 90	Reconstruction of subsidiary concrete drain between Dalvey Estate and Lewis Road work in Progress.
10. Fern Hill ..	750	..	..	..	20	860	..	..	20	..	..	3,041 08	3,961 25	Reconstruction of Main Drain. Work in progress.
13. Stevens Road ..	480	..	300	..	..	1,530	..	..	..	..	..	3,084 51	3,659 45	Reconstruction of Main Drain. Work in progress.
38. Alexandra Swamp	200	250	..	..	..	250	..	..	..	..	..	6,135 59	1,226 00	Realignment and reconstruction of drain to suit S.I.T. layout. Work in progress.
42. Grange Road ..	400	..	..	20	..	750 (New) 135 (Old)	..	..	5	..	..	2,443 25	2,183 46	Reconstruction of Main Drain. Work in progress.
53. Tanglin Hill ..	265 (Old)	545 (Old)	..	..	..	..	..	..	..	..	..	2,068 18	117 50	Realignment and reconstruction of concrete drain to conform to S.I.T. layout.
58. Moulmein Road	108	..	..	4	..	652 (New) 34 (Old)	..	..	18	..	..	5,235 79	1,974 59	Diversion of existing Anti-malarial Drain. Culvert across the approach road constructed to C.E. specification. Work completed.
109. Mount Pleasant Ravine ..	1,006 (New) 23 (Old)	..	44	135	..	2,930 (New) 721 (Old)	2,143 (New) 138 (Old)	..	324 (New) 165 (Old)	285	..	40,441 28	14,007 05	Clearing of undergrowth. Construction of new outlet drain for Mount Pleasant and MacRitchie Reservoir Ravine. Work completed.
111. Thomson Road	..	..	..	..	..	..	..	..	..	..	..	1,327 95	..	General clearing of undergrowth. Work completed.
115. Alexandra Road Ravine ..	215 (New) 59 (Old)	175 (New) 25 (Old)	130 (New)	240 (New) 30 (Old)	..	455 (New) 575 (Old)	20 (Old)	..	1,216 (New) 32 (Old)	..	..	4,799 08	14,574 03	Repairs to Anti-malarial Drain and laying of subsoil pipes. General clearing of the floor of the ravines were also carried out. Work completed.
117. Chandu Factory Ravine ..	..	..	..	..	..	..	..	..	170 (Old)	..	..	640 63	30 00	Trapping of Outcropping seepages caused by landslide was carried out.

NEW CONSTRUCTION WORKS CARRIED OUT—*continued*

Anti-Malarial Area	MATERIALS USED											Labour Cost	Material Cost	Remarks
	Inverts					Slabs		Subsoil Pipes			Misc.			
	21″	18″	15″	12″	9″	18″	12″	8″	6″	4″				
												$ c.	$ c.	
126. Temple Ravine	355	177	..	..	..	400	..	..	..	..	..	10,137 28	2,151 70	Deepening and replacement of existing earth ditch by concrete inverts and slabs. Work suspended.
130. Mt. Washington	141	3	..	6	..	280	125	..	632	21	..	5,119 96	2,954 17	Construction of concrete drain. Outcropping seepages were trapped. Work completed.
146. Muslim Cemetery	130 (New) 180 (Old)	80 (New) 130 (Old)	..	..	..	600 (New) 30 (Old)	..	..	..	..	..	1,860 15	1,484 25	Reconstruction of concrete drain. Work in progress.
172. Sommervile Ravine ..	..	..	..	..	..	..	..	..	360	..	..	3,421 88	1,512 94	General clearing of undergrowth. Straightening and deepening of earth drains. Work completed.
183. Namely Avenue Ravine ..	..	729	94	..	..	1,466	8	152	1,761	..	..	14,670 02	4.803 23	General clearing of undergrowth and vegetation. Construction of the central drain and a washing place and several ponds and depressions, were levelled off. Work in progress.

APPENDIX *E*

DETAILS OF CONSTRUCTION CARRIED OUT IN AREAS ALREADY PERMANENTLY DRAINED BY EXISTING ANTI-MALARIAL WORKS

Anti-Malarial Areas	MATERIALS USED																				Labour Cost		Material Cost	
	INVERTS										SLABS				SUBSOIL PIPES									
	21″		18″		15″		12″		9″		18″		15″		8″		6″		4″					
	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	$	c.	$	c.
2. Barker Road Ravine	..	..	10	..	..	..	..	..	..	..	5	..	..	..	..	..	..	..	..	..	35	28	41	20
5. Cluny Ravine	65	10	..	..	..	..	..	..	..	..	50	160	..	..	..	..	..	..	..	..	320	04	328	85
7. Gleneaird	70	..	55	..	..	..	10	..	30	..	60	245	..	..	..	..	..	..	..	..	481	46	596	93
8. King's Road/Tyersal Ravine ..	..	..	210	..	..	..	..	..	..	..	60	195	..	..	..	..	10	..	..	..	547	39	702	44
9. Nassim/Dalvey Ravine ..	60	..	..	..	..	..	..	..	..	..	25	95	..	..	..	..	..	..	..	..	154	90	258	20
10. Fern Hill Ravine	80	10	..	..	..	..	..	..	..	..	170	150	..	..	..	..	..	..	..	..	413	02	572	90
12. Scotts Road Railway ..	..	..	..	..	7	..	..	..	..	..	5	40	..	..	..	..	..	..	..	..	23	82	28	88
14. Watten Estate	12	..	33	..	40	..	6	..	..	..	85	1,530	..	..	..	..	105	20	..	..	831	39	529	95
15. Woodleigh	..	..	5	..	..	..	..	..	..	..	65	250	..	..	..	..	..	..	..	..	353	36	181	91
17. Chandu Factory	..	..	..	..	..	..	..	..	..	..	10	..	..	..	..	..	..	..	..	..	22	53	23	15
18. Hammer & Co., Ravine ..	..	..	20	..	..	..	80	..	..	..	30	130	..	..	..	..	..	..	..	..	133	86	263	88
19. S.H.B. Ravine	150	85	..	8	..	..	..	..	..	..	115	415	..	..	..	..	..	..	..	..	693	87	785	80
20. Jervois Road Ravine No. 1 ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	60	..	..	..	..	..	127	26	9	00
25. Morse Ravine	..	..	..	..	5	..	..	..	..	..	15	..	..	..	..	..	..	..	..	..	30	04	39	40
29. Orchard Road Ravine No. 2 ..	..	..	5	..	..	..	..	..	..	..	40	..	..	..	..	..	..	..	..	..	54	81	82	99
30. Orchard Ravine No. 3 ..	75	..	40	..	..	..	..	..	..	..	170	120	..	..	..	..	..	..	..	..	336	44	665	76
32. Radin Mas Ravine	20	..	234	..	..	..	41	..	..	..	224	730	..	..	..	..	..	..	5	..	992	22	1,237	39
35. Tiong Bahru	125	5	..	..	..	5	20	..	..	..	290	150	..	..	..	..	15	..	..	..	886	36	1,225	40
36. Wishart Ravine	100	85	..	..	10	..	5	..	..	..	145	157	..	..	..	..	..	..	..	130	1.406	69	727	02
37. Woodneuk	..	..	10	..	10	..	72	..	..	..	..	..	..	..	..	..	..	..	..	..	582	65	570	03
38. Alexandra Swamp	..	..	..	..	..	..	10	..	..	..	30	20	..	..	..	..	..	..	..	..	65	16	54	15
39. Balestier Plain	..	..	..	..	..	..	90	250	..	..	90	(12″ Sl	abs)	..	..	..	..	..	..	..	203	10	294	40
41. Gallop Road	..	..	..	..	30	..	..	..	..	..	40	..	..	..	..	..	..	..	..	..	265	56	153	45
42. Grange Road	10	38	..	..	..	..	..	..	..	..	50	100	..	..	..	..	..	..	..	..	202	21	149	96
43. Holland Park No. 1 ..	..	..	60	..	..	..	30	..	..	..	..	40	..	..	..	..	..	..	..	..	206	13	215	65
44. Holland Park No. 2 ..	..	..	20	..	..	..	..	..	..	..	10	110	..	..	..	..	..	..	..	..	59	42	75	68
48. Rochalie	..	..	..	..	..	..	..	..	..	..	50	30	..	..	..	..	..	..	..	..	78	40	86	80
49. Swettenham Road	10	..	20	..	..	..	6	..	5	..	75	90	..	..	..	..	..	..	..	..	337	08	134	80
50. Tanglin Barracks No. 1 ..	..	..	105	..	..	..	40	..	..	..	60	55	110	140	..	..	..	..	5	..	587	76	508	79
51. Tanglin Barracks No. 2 ..	5	..	..	..	..	..	..	..	..	..	30	60	..	..	..	..	..	..	..	..	131	78	74	80
54. Tanglin Hill No. 2	..	..	110	..	..	..	..	..	..	..	45	180	..	..	..	..	4	..	..	..	380	22	302	29

DETAILS OF CONSTRUCTION CARRIED OUT IN AREAS ALREADY PERMANENTLY DRAINED BY EXISTING ANTI-MALARIAL WORKS—*continued*

Anti-Malarial Areas	MATERIALS USED																				Labour Cost		Material Cost	
	INVERTS										SLABS				SUBSOIL PIPES									
	21″		18″		15″		12″		9″		18″		15″		8″		6″		4″					
	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	$	c.	$	c.
56. Henderson Road	15	..	..	..	..	..	..	..	..	..	100	60	..	..	..	..	..	..	..	..	102	18	215	70
57. Bukit Brown Golf Club	..	..	..	..	..	..	..	..	..	..	..	..	..	..	60	700	..	..	..	..	877	90	144	80
58. Kampong Java	..	..	..	..	24	..	25	..	..	..	80	386	..	..	..	..	..	..	..	..	402	27	292	25
63. Swiss Cottage No. 1	..	..	..	..	..	..	..	..	..	..	..	..	10	23	..	..	..	..	..	..	52	92	22	60
70. Chancery Lane No. 1	10	..	..	..	..	..	..	..	..	..	30	80	..	..	..	..	..	..	..	..	282	34	91	15
75. Government Hill	..	..	6	..	..	..	..	..	..	..	5	20	..	..	..	..	..	..	..	..	30	36	30	47
79. Serangoon Village	35	..	10	10	12	50	5	15	10	..	105	545	..	..	..	..	..	..	..	..	489	53	469	00
81. Mount Rosie	115	290	160	115	..	..	170	10	35	23	1,950	1,085	..	..	..	..	..	..	..	..	3,796	76	4,659	09
89. Kampong Bahru	..	..	..	..	..	..	125	70	15	..	..	..	..	..	..	..	..	..	..	..	203	34	276	90
90. Outram Road Ice Factory	20	..	..	..	..	..	..	..	..	..	..	20	..	..	..	..	..	..	..	..	46	98	60	40
91. Holland/Bukit Timah Roads	75	..	30	..	..	..	80	10	..	..	310	270	60	..	..	..	..	..	..	..	1,223	01	890	71
96. Western Reclamation	130	30	..	100	..	..	..	..	..	..	140	125	..	..	..	..	..	..	..	..	395	50	696	60
100. Adam Park	53	..	117	..	25	..	5	..	..	..	183	1,130	..	..	..	..	150	..	..	45	1,562	71	1,207	36
101. McPherson Road	..	..	..	..	..	..	10	25	..	..	40	590	15	75	..	..	..	..	..	..	986	09	348	64
105. Bukit Permai	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	80	..	..	150	63	73	46	00
106. Jalan Besar	..	..	..	95	..	..	25	70	..	..	5	90	..	..	..	..	..	..	..	..	157	20	74	45
107. Wayang Satu	95	..	124	..	10	..	..	..	21	..	268	1,130	..	..	..	..	8	80	2	..	1,817	38	1,331	54
109. Mount Pleasant	5	66	12	137	15	..	300	88	15	..	418	208	..	..	180	40	..	..	..	..	787	58	1,433	85
110. MacRitchie Reservoir	119	77	..	..	5	35	..	..	..	..	304	495	..	..	..	..	160	120	..	..	1,239	37	798	76
115. Alexandra Road Ravine	130	55	5	10	21	..	25	12	..	..	175	85	..	..	..	..	..	..	..	..	2,996	14	857	40
116. Sungei Whampoe	..	..	..	..	..	..	20	70	..	..	28	410	25	47	..	..	..	..	..	..	530	51	255	05
117. Telok Blangah Road Ravine	20	32	..	..	..	..	..	..	..	..	40	75	..	..	..	..	..	..	..	..	200	13	163	04
118. Kallang Reservoir (Island Golf Club)	20	..	10	..	..	..	..	..	..	..	40	53	..	..	..	..	..	..	..	..	186	90	43	17
125. Alexandra Road Faber Ridge Ravine	155	69	..	..	..	..	20	12	..	..	320	220	..	..	..	..	..	..	..	..	777	46	1,193	32
129. Sungei Namely Ravine	80	..	5	..	70	..	110	..	..	..	335	215	5	100	..	..	..	..	..	..	1,236	79	1,290	50
130. Mount Washington Ravine	170	185	30	..	21	..	70	..	15	..	430	1,140	..	..	..	..	70	..	..	..	1,561	95	1,761	33
132. Bugis Estate Ravine	2	..	5	..	..	..	20	..	..	..	10	100	..	..	..	..	4	..	..	..	155	51	90	92
133. Kallang Basin	..	40	..	144	..	647	396	1,696	..	..	723	2,073	30	..	..	..	..	..	..	..	10,317	15	2,454	24
135. Kim Keat Road Ravine	..	..	..	30	..	..	15	..	5	..	50	500	..	..	..	..	..	..	..	..	391	55	202	20

APPENDIX *E—continued*

DETAILS OF CONSTRUCTION CARRIED OUT IN AREAS ALREADY PERMANENTLY DRAINED BY EXISTING ANTI-MALARIAL WORKS—*continued*

Anti-Malarial Areas	MATERIALS USED																				Labour Cost	Material Cost
	INVERTS										SLABS				SUBSOIL PIPES							
	21″		18″		15″		12″		9″		18″		15″		8″		6″		4″			
	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	$ c.	$ c.
136. Boon Teck Road Ravine ..	..	..	10	25	..	30	30	20	20	..	260	905	..	..	..	..	5	..	..	..	723 44	715 20
137. Tai Jin Ravine	..	..	..	..	..	..	..	50	630	30	80	40	340	..	..	..	..	..	..	..	365 64	232 50
138. Ah Hood Road Ravine ..	..	70	5	15	..	..	11	20	10	12	35	270	..	..	..	..	250	..	..	..	524 68	299 30
141. Thomson Road No. 5 ..	..	..	..	..	..	10	18	..	..	..	..	5	10	45	..	..	..	..	..	..	45 23	62 60
142. Thomson Road No. 2 ..	..	..	10	15	..	..	5	..	15	10	20	85	..	..	..	..	..	..	..	..	154 92	112 13
148. Serangoon Road Ravine ..	40	90	..	..	..	..	25	20	..	..	95	595	..	..	..	..	155	..	..	..	622 13	581 74
150. East Lyne No. 2	..	..	..	..	..	30	..	..	..	..	..	25	..	10	..	..	..	..	..	..	46 50	8 20
151. Hokien Cemetery No. 1 ..	..	..	..	..	..	..	5	..	..	..	10	40	..	..	..	..	..	..	..	..	182 96	54 63
153. St. Michael's Road ..	..	..	..	..	..	..	5	..	20	30	85	470	..	..	..	..	..	..	..	..	603 01	310 90
154. Thomson Road No. 4 ..	..	15	4	30	..	..	1	..	9	..	..	..	..	..	..	..	..	..	..	..	70 63	28 85
164. Woodsville Ravine ..	..	..	..	..	..	..	20	95	..	..	..	..	..	..	..	..	..	..	..	..	93 84	48 84
168. Thomson Road No. 7 ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	125	100	..	..	198 50	78 00
170. Braddel Road Ravine ..	..	..	45	25	6	25	..	30	15	50	46	345	..	..	..	..	..	..	..	..	404 18	282 43
172. Sommerville Road Ravine ..	..	..	..	..	..	35	40	215	..	..	70	360	..	..	..	..	..	..	..	..	469 65	240 80

APPENDIX *F*

KAMPONG SANITATION

Kampong	MATERIALS USED										Miscellaneous	Labour Cost		Materials Cost		Remarks	Distribution of Maintenance Gang
	INVERTS					SLABS		SUBSOIL PIPES									
	21″	18″	15″	12″	9″	18″	15″	8″	6″	4″		$	c.	$	c.		
NORTH																	
Geylang Serai ..	..	..	..	..	..	..	..	..	..	..	..	18,720	30	188	09	General Maintenance and Repairs to culvert ..	18 labourers & 1 Mandore
Kampong Amber ..	..	..	..	..	..	..	..	..	..	..	..	2,441	26	..		General Maintenance ..	
SOUTH																	
Kampong Silat ..	..	5	..	100	230	40	20	..	..	..	..	15,332	26	747	65	General Maintenance ..	11 lab. plus one mandore
Kampong Silat (S.I.T.)	..	..	..	..	..	..	..	..	..	..	..	1,135	90	..		General Maintenance ..	1 ,,
Kampong Mt. Washington	..	..	..	35	10	..	..	..	..	..	..	2,458	39	112	13	General Maintenance ..	2 ,,
Kampong Bt. Permai ..	..	..	..	..	..	..	..	..	..	..	..	1,135	90	..		General Maintenance ..	1 ,,
Kampong Alexandra ..	..	..	4	195	40	12	6	..	..	..	2 Hume Pipes 15″	4,764	84	544	06	General Maintenance and extension to existing drains ..	3 ,,

CHEMICAL LABORATORY

THE TOTAL number of samples received and analysed during the year amounted to 23,233.

The samples were made up as follows:—

Water Department	13,698
Sewerage Department	3,353
Health Department	826
Electricity Department	143
Gas Department	99
Fire Brigade Department	4
Engineer's Department	23
Architect's Department	2,080
Veterinary Department	4
Stores and Workshops	14
Transport Centre	1
Commercial Firms	2,988
Total	23,233

There was an increase of 1,184 in the number of samples over that received during 1952.

The details of samples received from the City Council Departments were as follows:—

WATER DEPARTMENT

Water Supply	12,813	Boiler Water	289
Clear Water Tank	53	Cathode	1
Hydrated Lime	9	Pipe Slime	2
Sovacide	1	B.T. (Silicate Flocculation)	13
Drinking Water	11	B.T. Experimental Tanks	18
Deposit	1	Fertilizer	1
Indicators, Solutions, Chemicals etc.	323	Tap Water	1
Exp. Filter Tebrau	39	Magnesium Anode	2
Solution (2.3% W/V. H_2SO_4)	1	Suspended Matter	1
Sodium Silicate	6	B.T. and Tebrau (Silicate feed concentration)	2
Plastic Plumbing Equipment	2	Supply Water	1
Tebrau River Water	4	Sodium Aluminate	1
Carbon Tetrachloride, Benzine	2	Water	47
Gunong Pulai Filters	5	Galvanized Pipe	6
Bath-water	1	Alum	1
Soil and Polythene Bag	2	Sulphate of Alumina	8
Alum Sulphate	1	Lime	6
Soils	14	Silicate Bicarbonate	2
Sediment in water	1	Aluminium Sulphate	1
Chloride of Lime	3	Tebrau River Water (Sed. Flocculation)	3

During 1952 an extensive survey of alternative methods of purification of raw water from all current sources on the Island and in Johore and from the Tebrau River and Island Streams was undertaken having in view hygienic efficiency, economy and strategical availability of chemicals. Several hundred comparative tests were made in these raw waters using combinations of Alum Sulphate, Lime, Sodium Aluminate, Chlorinated Copperas acid and Alkali-conditioned Silicate and Hydroxy Ethyl Cellulose.

In consequence of the results of this work in 1952, intensive investigation of the use of Alkali-conditioned Silicate was undertaken in 1953. In May an experimental pilot plant test was made at Bukit Timah Works using MacRitchie Reservoir Water. This test demonstrated that a 50 per cent increase in throughput of treated water of rather better quality could be achieved.

Attention was then turned to the application of this treatment to Tebrau River. After preliminary laboratory tests, a full scale works trial run was made in October 1953. 5 million gallons per day of water of high quality was obtained from each of two sedimentation units designed for two m.g.d. each and capable in practice of three m.g.d. output when used with the conventional Lime/Alum treatment. Sedimentation tank runs and filter runs were shown to be considerably extended.

Meanwhile in July 1953 a pilot plant experiment was devised at Woodleigh Works to investigate the possibility of speeding up sand filtration of water from Peirce Reservoir by dosage with Hexametaphosphate: using a cement pipe tower. The results from this experiment were very encouraging and separate dosing facilities were provided to try out the method on one of the filters in the works by the end of the year. This works scale trial has since been completed with marked success.

The ranges and averages of daily analysis of the various raw and treated waters are shown in Tables *A* and *B* attached. Table *C* gives monthly complete analysis of water from the clear water tanks. The satisfactory quality of the City supply is maintained.

SEWERAGE DEPARTMENT

The following samples were analysed:—

Sewage effluents, sludge and top-water	2,807	Small Installations	405
Water	2	Special Samples	27
Sand	2	Deposit	2
Sewage from Sewer	2	Filtered Lubrication Oil	1
Lubricating Oil	2	Sewage and Stream Samples	15
Excavated Material	2	Stream Water	51
Ropes	5	Soln. (5% of Copper Sulphate)	2
'Racasan' Germicidal Deodorant	1	River Water	27

There was a substantial increase (517) in the number of sewage samples analysed due mainly to increased investigational work, related (*a*) to experimental filters at Alexandra Road Works and (*b*) to the occurrence of widely varying results in the final effluent from Kim Chuan Road Works.

Sewage Purification

The purification system remains unchanged. Water-borne sewage is purified either at Alexandra Road or Kim Chuan Road. The crude night-soil from unsewered areas, is collected at People's Park, Albert Street or Paya Lebar Road thence to Serangoon for final treatment. The solid matter from the water-borne sewage at Alexandra Road also receives treatment in the night-soil tanks at Kim Chuan Road. The final purified effluents enter the Alexandra Road Stream from Alexandra Road Works and the Serangoon River from the Kim Chuan Road Plant.

Continuous pumping of night-soil from the pumping stations was commenced towards the end of the year with the result that a sewage, with somewhat reduced septicity was received at the treatment works.

The average qualities and ranges of the final effluents from Alexandra Road and Kim Chuan Road are shown in the following plants (results expressed as parts per 100,000):—

———	INTO ALEXANDRA ROAD STREAM		INTO SERANGOON RIVER	
	Range	Average	Range	Average
Free and Saline Ammonia	0.40/2.88	1.06	0.72/3.2	2.22
Albuminoid Ammonia	0.08/0.40	0.22	0.16/1.0	0.45
Oxygen absorbed in 4 hours ..	0.60/1.80	1.20	1.30/3.85	2.65
Bio-chemical oxygen demand ..	0.70/5.75	2.00	2.20/7.55	4.90
Total Solids	36.4/279.8	81.2	38.2/117.8	65.4
Suspended Solids	0.5/6.6	2.4	1.1/31.6	4.1
Nitrates (as N2)	abs./0.8	0.3	abs./0.1	abs.
Chlorides (as Cl)	10/101	27	10/50	20
pH Value	7.1/7.7	7.5	7.3/8.0	7.6

The results of analysis indicate that the effluent from Alexandra Road is somewhat poorer in quality than that obtained during the previous year whereas the effluent from Kim Chuan Road show a marked improvement over that formerly obtained. Both effluents can, for practical purposes, be considered reasonably satisfactory.

Sewage Effluents from small Installations

The samples submitted represent the final effluents discharging into open drains. The average qualities and ranges (in parts per 100,000) on the samples examined are as follows:—

———	Range	Average
Free ammonia	0.24/5.6	1.79
Albuminoid ammonia	0.03/0.80	0.28
Oxygen absorbed in 4 hours	0.25/8.20	1.43
Suspended Solids	0.3/7.3	2.5
Chlorides	1.0/6.8	2.7
Nitrates	abs./2.9	0.3

Generally speaking, the quality of the effluents is somewhat poorer than that of the previous year.

HEALTH DEPARTMENT

The following samples were received for analysis:—

Coca-Cola	3	Pepsi-Cola	1
Mushrooms	37	Soda water	88
Milk	144	Almond Syrup	7
Whisky	6	Pineappleade	1
Strawberry Jam	1	Drugs	7
Camphorated Oil	2	Soya Bean Sauce ..	15
Coffee	12	Orange Kist	3
Evaporated Milk	4	Abalone	10
Bread	5	Well Water	72
Coffee Mixture	50	Fruits in Syrup	4
Sweetened Almond Powder ..	1	Aerated Water Metal ..	2
Citronella	1	Kajuput	1

ABC Stout	1
Pepper	1
Orange Cordial	23
Quinine	2
Liquid Paraffin	3
Vegetable Soup	1
Macaroni	1
Sweets	15
Cooking Fat	2
Coriander Powder	10
Metal Mould	3
Skimmed Milk	4
Tin Tab	1
Lead Alloy Mould	1
Chinese Medicine	2
Glycerine	9
Canned Food	10
Pure Olive Oil	1
Fruit Juice	4
Colouring Powder	7
Lime Juice	2
Glycerine Borax	3
Citric Acid	1
Lime Juice Soda	1
Canned Slice Bacon	2
Canned Cauliflower	3
Skin from Carcass of Pigs	3
Plum Water	1
Canned Sausages	4
Oat-fel	1
Sweetened Soya Sauce	1
Roasted Wheat	1
Ice Cream	19
Friar's Balsam	7
Curry Cider	1
Tincture of Cardamom	10
Tincture of Ipecacuanha	10
Tincture of Rhubarb	1
Tincture of Ginger	4
Soya Sauce Mixture (Sweetened)	1
Vegetable Ghee	2
Peanut Oil	1
Anti-Malarial Oil	2
Sardines	20
Tomato (Canned)	2
Sweetened Condensed Milk	16
Honey	1
Rice Vinegar	4
Quinine Sulphate	1
Coriander Mixture	3
Pepper Mixture	6
Cooking Product	5
Curry Powder	8
Tubes of Soda Fountain	2
Collecting Tube	1
Coal Tar Dye	1
Pork Meat	1
Worm Powder	2
Destrine	1
Flavouring Essences	9
Olive Oil	1
Grape Fruit	2
Barley Water	1
Banana Squash	1
Zinc Ointment	1
Canned Guavas	6
Zinc Oxide Ointment	1
Canned Pork Luncheon Meat	2
Peeled Shrimps	1
Canned Plums	1
Canned Black Pudding	2
Gingelly Oil	15
Canned Fruits	1
Arachis Oil	1
Lemonade	5
Tincture of Orange	20
Coffee Beans	1
Popsicle	7
Tincture of Gentian	3
Tincture of Iodine	1
Roasted Meat	1
Tea dust	2
Lemon Draught	1
Gentian Violet Soln. 2%	2
Canned Strawberries	4

The number of samples from the Health Department increased numerically by over 50 per cent and the range of Food and Drugs samples broadened considerably. A large number of the samples analysed was found to be adulterated and court proceedings were instituted in all cases. It must be recorded that, while the City Police Court took a serious view of food adulteration and levied penalties accordingly, the proven adulteration (i.e. below standard quality) of drugs was frequently viewed with surprising lenience.

A summary of prosecutions instituted as a result of Food and Drugs sampling and analysis is shown in Table *D* attached.

ELECTRICITY DEPARTMENT

The following samples were received for analysis:—

Fuel Oil	110
Transformer Oil	13
Solder and Plumber's Metal	8
Ink Writing	1
Boiler Water	9
Liquid Paraffin B.P.	1
Shell Turbo	1

Consequent on the establishment of a power station laboratory at Pasir Panjang there was a reduction in the number of samples received from this department, a member of my laboratory staff carried out work at Pasir Panjang until the arrival of the new station chemist from United Kingdom.

A particularly interesting job carried out for this department was the examination of a tender form which was shown to have an altered date of tender.

GAS DEPARTMENT

The following samples were received for analysis:—

Town Gas	2	Spent Oil	11
Boiler Water	15	Tar	4
Dehydrated Tar	3	Bog Ore	1
Spent Oxide	1	Coal	51
Coke	1	Oil Sludge	1
Water	3	Screw	1
Deposit	1	Tarry Deposits	4

FIRE BRIGADE DEPARTMENT

The following samples were received for analysis:—

Sparklers	1	Fire Extinguisher H_2SO_4	1
Aluminium Plate	1	Rectified Spirit	1

These samples were received in connection with fire or explosive hazards.

ENGINEER'S DEPARTMENT

The following samples were received for analysis:—

Water	3	Sand	12
Solution (Nitric Acid)	1	Plates	3
Soil	1	Subsoil Water	2
Earth Sample	1		

A good deal of attention was paid to improving the quality of the sand used for making concrete etc.

CITY STORES AND WORKSHOPS

Fourteen samples, made up as follows were received:—

Ropes	2	Sand	1
Wire	1	Soap	8
Coconut Oil	1	Boiler Water	1

The analysis of the soaps indicated that it is false economy to buy the cheapest soap. As a result of this investigation, contracts for soap were revised on a more realistic basis.

CITY TRANSPORT CENTRE

One sample of Benzine was received for analysis.

ARCHITECT'S DEPARTMENT

The following samples were received for analysis:—

Pool Water (Mount Emily)	1,000	Pool Water (Yan Kit)	1,078
Paint	2		

The samples were mainly pool waters from Yan Kit Road and Mount Emily. Generally, the quality of the water was satisfactory.

VETERINARY DEPARTMENT

The following samples were received for analysis:—

Urine and Blood (Dog)	1	Viscera (Dog)	2
Liver (Duck)	1		

The samples were submitted for possible deliberate administration of poisonous substances. Copper was found in one case.

COMMERCIAL FIRMS

A total of 2,988 samples were reported on: 524 more than in 1952. These may be classified as follows:—

Essential Oils	50
Vegetable Oils	624
Ores	36
Alloys	17
Food	460
Chemicals	32
Local Products	1,229
Damaged Goods	139
Miscellaneous	401
Total	2,988

The types of samples received under these main classifications are as follows:

Essential Oils

Patchouli, Gingelly, Linseed, Cananga.

Vegetable Oils

Palm, Sludge, Coconut.

Ores

Bauxite, Iron, Galena, Maganese, Copper, White Metal.

Alloys

Tin-Ingots, Aluminium, Tin Slabs, Ferro-magnesium Mica, Zinc, Tin Tailing.

Food

Ice Cream Mix, Reconstituted Milk, Creamy Milk, Fresh Milk, Flour, Pepper, Wheat Grain, Condensed Milk, Molasses, Cheese, Chocolate, Salt, Sterilized Milk, Curry Powder, Illipenuts, Groundnut Oil Cakes, Leghrons, Dry Apricot, Honey, Powdered Milk, Pie and Tomato Sauce.

Chemicals

Solution CO2, Acetyl Salicylic Acid Powder, Phenacetin Powder, Potassium Xanthate, Glycerine, Monoethanolamine, Sodium Arsenite, Gastric Stimulant, Worm Powder, MEA Solution.

Local Products

Latex, Cutch, Jelutong, Tallow, Derris Root, Copra, Copra Cake, Gambier, Pineapple Sludge, Soap, Patchouli Leaves, Cinchona Bark.

Damaged Goods

Piecegoods, Cardboard Carton, Hessian Wrappings, Rubber, Dried Chillies, Wood and Steel Strapping, Rice Bran, Maize, Seed, Gunny Sacking, Jaggery (brown sugar), Rice, Abalone, Steel Angles, Galvanized Plain Sheets, Writing Paper, Galvanized Iron Wire, Maize, Mill Offal, Tobacco, Crepe rubber, Rubber smoked sheet, Corrugated Iron sheetings, Evening dress, Red beans, Sewing machines, Canned Sausages, Tracing Wheels, Shirts, Canned Meat, Oil Sludge and Abrasive Mineral, Steel Bars, Cotton Shirtings, Banana Essence, Saws, Plywood Sheets, Muntz Metal Sheets.

Miscellaneous

Pool Water, River Water, Sewage, Septic Effluent, Cyder, Cement, Cube Gambier, Whisky, Hydrated Lime, Fish Meal, Fuel Oil, Abestos, Cigarettes, Oat Bran, Coal, Water, Oil, Deposit, Piecegoods, Essence of Tonic, Chicory, Stainless Steel, Scrap, Sand, Rings deposits, Sisal, Coke, D.D.T. Powder, Quinine, Woodrosin, Nicotine, Compressor deposit, Aniline dyes, Silica Sand, Concrete block, Cement, Castor Seeds, Fertilizer, Pineapple Silage, Aluminium Foils, Cough Mixture, Lemonin, Calcium Chloride Brine, Travelling Rugs, Blanket, P.V.C. Tiles, Pure Yeast, Paints, Urine, Well water, Stream Water, Aquarium water, Tablets, Quinine Bark, Cement Base Paint, Guano, Peppermint Cure, Benjamin, Granite, White Crystalline Powder, Palm Kernel Seeds, Filter deposit, Boiler Scales, Coal Tar, Fish Meal, Talcum Powder, Dynamite and Crude Glycerine, Carbon Black and Zinc Oxide, Coarse Aggregate, Coconut Oil Acid, Chinese Wood Oil.

ACCOMMODATION

There was no alleviation of the dreadfully overcrowded working conditions in the laboratory.

STAFF

The weekly lectures to laboratory assistants by senior staff commenced last year, were continued.

Mr. Swee Lian Choo, Supernumerary Laboratory Officer retired from the service in October 1953, after more than 38 years service.

The vacant post of Assistant Analyst was filled by Mr. Tan Tong Teck in September 1953.

Mr. Lim Chin Kuan, Understudy to Deputy Analyst, returned from study leave in United Kingdom in November, 1953.

Mr. Ee Lye Whatt was promoted to the post of Senior Laboratory Assistant in February 1953.

I have again to record my thanks to all members of the staff for their willing co-operation during the year.

T. A. SPILLANE,
M.SC., A.R.I.C., F.I.C.I.,
City Analyst.

TABLE *A*

RESERVOIR AND RIVER WATERS

AVERAGES OF DAILY ANALYSIS FOR THE YEAR 1953

Parts per million	PONTIAN		PULAI		MACRITCHIE		PEIRCE		TEBRAU	
	Average	Range	Average	Range	Average	Range	Average	Range	Average	Range
Nitrites	a	..	a	..	a	..	a	..	a	..
Carbon Dioxide	2.7	1.5/12.0	5.7	1.5/10.0	1.5	0.7/3.5	1.8	1.0/4.5	4.0	2.0/6.5
Alkalinity ($CaCO3$)	4.3	3.0/6.0	4.8	3.0/6.0	2.5	1.0/4.0	1.7	1.0/4.0	2.0	1.5/3.5
pH	6.4	5.9/6.8	6.1	5.9/6.6	6.1	5.7/6.4	6.0	5.5/6.3	5.9	5.8/6.2
Fe	0.49	.20/.90	0.62	.20/2.0	.45	.10/.70	.52	.30/.90	.40	.30/.60
Hazen	23	16/50	28	10/120	26	16/48	27	18/46	62	30/250

Tebrau: Average of 7 months (June to December).

TABLE *B*

PURIFIED WATERS

AVERAGES OF DAILY ANALYSIS FOR THE YEAR 1953

Parts per million	PULAI		BUKIT TIMAH		WOODLEIGH		TEBRAU	
	CLEAR WATER TANK		CLEAR WATER TANK		CLEAR WATER TANK		CLEAR WATER TANK	
	Average	Range	Average	Range	Average	Range	Average	Range
Nitrites	a	a/trace	a	a/trace	a	a/trace	a	a/trace
Carbon Dioxide	a	a/0.5	a	a/0.5	a	..	.40	a/2.5
Alkalinity (CaCO3)	11.8	8.0/16.0	10.3	7.5/15.0	16.6	12.0/26.0	9.9	5.0/16.0
pH	8.8	8.0/9.5	8.5	7.3/9.0	8.8	8.3/9.6	8.0	6.5/9.2
Free Chlorine	.62	.40/2.0	.10	.02/.22	.35	.02/1.2	.60	.01/2.2
Sol. Aluminium	..	..	1.40	0.6/2.2	..	..	.30	.10/.65
Iron	0.40	0.20/0.90	.36	.20/.60	.48	.20/.90	.10	.10/.20
Hazen	18	9/35	15	5/25	18	5/35	5	5/40

Tebrau: Average of 7 months (June to December).

TABLE *C*

CLEAR WATER TANKS

AVERAGES OF MONTHLY COMPLETE ANALYSIS 1953

Parts per million		PULAI		BUKIT TIMAH		WOODLEIGH		TEBRAU	
		CLEAR WATER TANK		PUMPING MAIN		CLEAR WATER TANK		CLEAR WATER TANK	
		Average	Range	Average	Range	Average	Range	Average	Range
Free ammonia		.10	.08/0.16	.06	.02/.20	.14	.04/.24	.17	.04/.28
Alb. ammonia		.05	.02/.12	.06	.02/.12	.07	.02/.12	.06	.02/.12
Nitrites		a	..	a	a/trace	trace	a/trace	a	..
Nitrates		.006	a/.03	.006	a/.03	.012	a/.03	.021	a/.18
Carbon Dioxide		a	..	a	..	a	..	a	..
Alkalinity (as CaCO3)		11.6	10.0/12.0	11.2	10.0/12.5	16.7	13.0/23.0	10.9	9.0/12.0
Free Chlorine		.60	.50/.90	.11	.05/.20	.37	.25/.60	.51	.20/.70
Iron		.40	.30/.70	.36	.30/.60	.50	.30/.80	.10	.10/.15
Soluble Aluminium		..	..	1.55	.90/2.00	..	..	.36	.25/.50
Chlorides		5.4	5.0/6.5	5.6	5.0/7.0	5.3	4.0/6.0	5.1	4.0/6.5
pH		8.8	8.7/9.0	8.4	8.3/8.7	8.7	8.3/9.2	8.6	8.3/8.9
Hazen		20	14/35	17	11/22	20	12/30	6	5/12
Oxygen Absorbed in 4 hours		.60	.40/.80	.50	.40/.64	.48	.30/.68	.30	.10/.63
Hardness	Temporary	11.5	11.0/12.0	11.1	10.0/14.0	16.5	14/24	10.80	10.0/12.0
	Permanent	3.4	1.0/6.0	17.9	5.0/23.0	7.0	3.0/10.0	19.2	13.0/24.0
	Total	14.9	13.0/18.0	29.0	15.0/37.0	23.5	18.0/32.0	30.0	23.0/36.0
Solids	Organic	19.3	10.4/28.4	22.20	11.6/29.20	18.8	11.2/25.6	16.3	12.4/24.0
	Inorganic	26.8	19.6/42.4	37.0	25.2/58.0	21.7	12.0/40.0	35.4	25.2/47.2
	Total	46.1	30.0/64.4	59.2	48.4/82.0	40.5	23.2/60.8	51.7	36.4/62.0
B.O.D. in 5 days		0.59	.40/.93	.88	.40/2.13	.65	.40/1.06	.35	.13/.60

Tebrau: Average of 7 months (February to December).

TABLE *D*

Sale of Food and Drugs Ordinance	Prosecution	Not Served	Conviction	Fines
				$
Selling Adulterated Milk	34	13	21	2,100
Selling Adulterated Coffee Mixture	18	..	18	1,185
Selling Adulterated Coriander Powder	5	..	5	725
Selling Adulterated Glycerine	1	..	1	50
Selling Adulterated Tincture of Orange	3	..	3	120
Selling Adulterated Tincture of Ipecauanha	1	..	1	..
Selling Adulterated Gentian Violet Solution	1	..	1	50
Selling Adulterated Coffee Mixture and bearing false label	1	..	1	50
Selling Pepper Mixture bearing a false label	1	..	1	350
Selling Adulterated Groundnut Oil and not bearing label or statement in English	1	..	1	50
Selling Almond Syrup containing Saccharin	3	..	3	285
Selling Barley water containing Saccharin	1	..	1	50
Selling Food purporting to indicate sardines which was not sardines	1	..	1	50
Selling Food bearing a label that the contents was Vinegar which was not vinegar	1	..	1	50
Using Ghee in combination with the word 'vegetable'	1	..	1	100

BACTERIOLOGICAL LABORATORY

A.	PUBLIC HEALTH SPECIMENS	35,132
B.	WATER:—	
	(*a*) Routine	13,258
	(*b*) Mount Emily Swimming Pool .. .. (*c*) Yan Kit Swimming Pool	2,368
	(*d*) Miscellaneous	338
	(*e*) Algae and others	165
C.	SEWERAGE—Wash Water	38
	Grand Total ..	51,299

A.—PUBLIC HEALTH SPECIMENS

The total number of specimens received were 35,132 and involving 42,248 examinations. These specimens were from the following:—

City Health Office	8,401
City Infant Welfare Clinics	3,711
Middleton Hospital	6,957
St. Andrew's Mission Hospital ..	8
Kwong Wai Siu Free Hospital ..	10
Johore Water Works Dispensary ..	323
Medical Practitioners	6,484
Rats from Plague Prevention Unit ..	5,585
Ecto-parasites of Rats from Plague Prevention Unit	3,653
Grand Total ..	35,132

MALARIA

Species	Positive	Negative	Total
P. falciparum	5	..	5
P. vivax	20	..	20
Others	..	..	..
Total negatives	..	3,008	3,008
Grand Total ..	25	3,008	3,033
Source			
Medical Practitioners	18	559	577
City Health Office	3	2,371	2,374
Johore Water Works	4	78	82
Grand Total ..	25	3,008	3,033

TUBERCULOSIS

Specimen	Positive	Negative	Total
Sputum	57	1,443	1,500
Faeces	..	3	3
Urine	1	2	3
Pus	1	2	3
Cerebro spinal fluid	..	1	1
Animal glands	1	2	3
Milk	..	52	52
Grand Total ..	60	1,505	1,565

ENTERIC FEVER

——	Positive	Negative	Total
Blood for Widal Reaction:—			
Agglutination with Salmonella Typhi	67	194	261
Agglutination with Sal. paratyphi *A*	1	242	243
Agglutination with Sal. paratyphi *B*	1	242	243
Agglutination with Sal. paratyphi *C*	1	242	243
Agglutination with Vi I Antigen	11	299	310
Blood clot culture—Sal. typhi isolated	22	234	256
Faeces for culture —Sal. typhi isolated	17	787	804
Urine for culture—Sal. typhi isolated	9	787	796
Well water for typhoid culture	..	2	2
Grand Total ..	129	3,029	3,158

TROPICAL TYPHUS

Blood for Weil-Felix Reaction:—

Number of sera POSITIVE for B. proteus OXK ..	1
Number of sera POSITIVE for B. proteus OX19 ..	6
Number of sera investigated	232

DYSENTERY

——	Positive	Negative	Total
Faeces examination for Amoebae:—			
E. histolytica	85	..	85
E. coli	9	..	9
Negative	..	2,623	2,623
Total ..	94	2,623	2,717
Faeces for culture for Bacillary:—			
Shigella Flexner	44	..	44
Shigella Sonnei	11	..	11
Negative	..	978	978
Total ..	55	978	1,033
Grand Total ..	149	3,601	3,750

PLAGUE

No human specimens were received.

5,585 rats were dissected and none showed any signs of plague infection.

3,653 ecto-parasites were examined.

The species and distribution of all the rats and ecto-parasites that were examined are given in the following table:—

Source	R. Norvigicus		R. Rattus		R. Concolor		R. Musculus		Crocidura	Totals			
	M.	F.	M.	F.	M.	F.	M.	F.		Fleas	Mites	Rats	Pregnant
1. City area ..	1,101	1,939	239	214	261	320	149	62	47	2,865	264	4,332	204
2. S'pore Harbour Board	11	40	83	154	12	22	..	..	..	100	49	322	27
3. Health Officer (Port) ..	..	3	60	122	32	40	79	151	..	19	..	487	38
4. Health Officer (Rural)	8	26	49	69	115	151	18	8	..	314	42	444	32
Grand Totals ..	1,120	2,008	431	559	420	533	246	221	47	3,298	355	5,585	301
	3,128		990		953		467						
Total pregnant ..	166		62		47		26						301

A total of 622 dead rats were received from the following sources:—

(1) City area	132
(2) Health Officer (Port)	487
(3) Health Officer (Rural)	3
Total ..	622

Fleas—Of the 3,298 fleas caught and examined, 6 were identified as *C. felix* and the rest were *X. cheopis.*

The flea index in the Town area was =0.66.

CEREBRO SPINAL FEVER

One specimen of cerebro spinal fluid was examined with negative result.

LEPROSY

Skin smears—Positive	15
Negative	62
Total number examined ..	77

DIPHTHERIA

Throat swabs—Positive	550
Negative	3,681
Total number examined ..	4,231

MISCELLANEOUS EXAMINATIONS

——	Positive	Negative	Total
Urine for General examination	..	..	2,615
Pathological exudates	..	..	22
Pus for Gonococci	21	228	249
Urine for Gonococci	4	37	41
Blood for Differential count	..	..	437
Blood for Haemoglobin estimation	..	..	11
Blood for Culture	..	..	3
Blood for Weil's disease	..	1	1
Blood for Kahn Test	241	1,584	1,825
Blood for Filaria	3	13	16
Urine for Filaria	..	1	1
Faeces for Occult Blood	3	5	8
Faeces for Food-poisoning group	..	5	5
Faeces for Intestinal parasites	5,745	5,607	11,352
Sundried humus	..	..	133
Aerated Waters	..	..	2
Milk and Milk Products	..	..	220
Disinfectants	..	..	5
Animal organs for organisms	..	..	3
Canned Foods	..	..	7
Miscellaneous specimens	..	..	7
Grand Total	..	..	16,963

B.—WATER

(*a*) Thirteen thousand, two hundred and fifty-eight routine samples of water from the City Water Engineer were tested bacteriologically.

Throughout the year, the condition of the tap water remained satisfactory.

Results of examination on the various samples are summarized in the following table:—

YEAR 1953

Source	Year's average total colonies per m.l. at 37° C. in 24 hours	Year's average presumptive coliform count per 100 m.l.
MacRitchie Reservoir, Valve Tower	453	16
Peirce Reservoir, Valve Tower	365	11
Seletar Reservoir, Valve Tower	235	8
Pontian Reservoir, Valve Tower	394	32
Bukit Timah Reservoir, Clear Water Tank	23	nil
Woodleigh Reservoir, Clear Water Tank	90	Less than 1
Gunong Pulai Reservoir, Clear Water Tank	19	nil
Pontian Reservoir, Camp supply	64	Less than 1
Pearl's Hill Service Reservoir, Tank No. 1	89	Less than 1
Pearl's Hill Service Reservoir, Tank No. 2	94	Less than 1
Pearl's Hill Service Reservoir, Air Valve	51	Less than 1
Fort Canning Reservoir	133	Less than 1
Tebrau Reservoir, Clear Water Tank	26	Less than 1
Taps—Bacteriological laboratory	98	nil
Lorong Lalat Office	129	Less than 1
Joo Chiat Office	106	nil
Havelock Road Office	91	Less than 1
Pasir Panjang Office	69	Less than 1
Dunearn Road Office	29	nil
Average of six taps	87	Less than 1
MOUNT EMILY SWIMMING POOL		
Shallow End	20	Less than 1
Centre End	23	Less than 1
Filter Outlet	22	Less than 1
YAN KIT SWIMMING POOL		
Shallow End	20	Less than 1
Practice Pool (Deep End)	22	Less than 1
Main Pool (Inlet)	20	Less than 1
Main Pool (Outlet)	22	Less than 1

Results of City Council Swimming Pools were satisfactory throughout the year.

(*e*) Algae and others—one hundred and fifty-three samples of water were examined for algae count. All the results showed a low count.

Eleven samples of water containing red worms were identified as midge-fly larvae. One sample contained fresh water shrimps.

C.—SEWERAGE

Thirty-eight samples of wash water from the City Cleansing Department were examined and were found to be satisfactory.

NG SEE YOOK, L.M.S. (S'pore), D.P.H. (Lond.),
City Bacteriologist.

MATERNITY AND INFANT WELFARE DEPARTMENT

	1953	*1952*
I. *Total number of Confinements*	39,668	36,835
Nature of Confinements:—		
In Hospital	17,692	15,059
By Private Doctors	3,269	3,950
By Private Midwives	15,879	15,001
By City Council Midwives	1,364	1.211
With no skilled attention	1,464 3.7%	1.614
Of these Confinements:—		
Mothers visited by District Sisters within 10 days of confinement	21,834	21.520
Subsequent visits to Mothers	2,018	2,326
Mothers who died in puerperium	17	9
Mothers removed and untraced	137	221
II. *Total number of Births in City area*	40,002	37,243
Of which—Number of Twins were	326	285
Number of Triplets were	4	2
Neo-natal Deaths	1,449	1,317
Still-births	743	714
Number of new born babies seen by District Sisters	20,416	—
Babies born in Hospital	17,241	—
Babies untraced	153	—
III. *Visits paid by Health Visitors to homes:—*		
1st visits following Birth Report	30,225	28,639
Subsequent visits	58,969	57,317
	89,194	85,956
Percentage of Total Births visited by Health Visitors	76.19%	77.75%
IV. *Clinic Activities*		
A. INFANTS		
New infants 1st attendances at Clinics	19,625	17,120
Subsequent attendances of infants at Clinics	103,316	85,020
	122,941	102,140
Of these, attendances of sick babies were	79,184	66,364
i.e.	64.4%	64.97%
B. TODDLERS CONSULTATIONS		
1st visits	6,380	—
Subsequent visits	5,302	—
	11,682	27,215
C. SICK MOTHERS		
Number of treatment to Sick Mothers:—		
In Clinics	7,274	—
On District	2,639	—
	9,913	8,944
D. ANTE-NATAL CONSULTATIONS IN CLINICS		
(*a*) New Ante-natal Mothers attending	2,895	2.593
(*b*) Subsequent attendances	7,380	4,993
	10,275	7.586
Ante-natal Home visiting by Health Visitors	4.138	2,129
Kahn Blood Tests	192	156
Number Positive	20	18

E. IMMUNIZATION AGAINST DIPHTHERIA	*1953*	*1952*
(*a*) Under 1 year old:—		
1st injections	6,859	6,966
2nd injections	6,049	5,777
Total injections	12,908	12,743
(*b*) Over 1 year old:—		
1st injections	3,753	26,197
2nd injections	3,623	22,720
Total injections	7,376	48,917
Visits to homes to follow up cases	3,757	2,802
Febrile Reactions	449	3,521
Refused inoculations	13	38
(*c*) Contact Cases:—		
1st shot	416	226
2nd shot	286	211
Total	702	431

IMMUNIZATION AGAINST DIPHTHERIA AND WHOOPING COUGH	1953	1952
1st injections	176	—
2nd injections	120	—
3rd injections	100	—
Total injections	396	—
Febrile Reactions	21	—

F. FREE MILK POWDER DISTRIBUTION	1953	1952
Total number of New Babies given Free Milk	1,788	1,627
Number of nursing mothers given Free Milk	175	263
Number of Re-issues	24,339	21,558
Amount given to Salvation Army	632	480
Amount given to Convent Orphanage	1,130	600
Total number of lb. of Powdered Milk used	24,000	22,355

G. FAMILY PLANNING		1953	1952
Number of new cases fitted with caps		468	882
Revisits: Number coming to check appliances	310	1,204	1,187
Revisits: Old cases	894		
Unsuitable cases and failures		15	42
Cases referred to F.P.A. and K.K. Hospital		353	461
		2,040	2,572

V. *Free Midwifery Services from the Clinics*	1953	1952
(*a*) Free confinements conducted by City Council Midwives (8 Midwives for first 9 months, 10 Midwives after October 1953)	1,364	1,211
(*b*) Number of cases referred from K. K. Hospital for bathing by City Council Midwives	3,233	3,160
(*c*) Number of self-attended deliveries followed up by City Council Midwives	181	244
(*d*) Abnormal cases sent to K. K. Hospital	14	16
(*e*) Total visits paid by City Midwives to patients' homes	16,767	16,011
VI. *Supervision of Midwives in Private Practice by Supervisor of Midwives*		
(*a*) Number of inspections of Private Midwives bags in 3 Clinics	2,058	2,161
(*b*) District visits to check on Private Midwives' work	1,291	1,012
(*c*) Investigation of Puerperal fevers reported	43	78
(*d*) Investigation of Tetanus Neo-natorum reported	5	9
Birth rate	—	47.36
Infant Mortality Rate	—	75.34
Maternal Deaths	—	68.

COMMENTARY

Confinements

The upward trend in the number of births continues in 1953, with a total of over 40,000. The popularity of confinements in K. K. Hospital was manifested by an increase of 2,633 over the 1952 figure, and this was reflected in the large number of bathings of mothers and babies, referred, after their discharge on the 3rd day after confinement from K. K., to the City Council Midwives. With this hospital service and the increased demands for the free services of City Council Midwives it is gratifying to see a drop in the number of self-attended cases to about 3.7 per cent of the total number of confinements, with a consequent drop in the number of Tetanus Neo-natorum cases notified. The training school at K.K. Hospital turns out a large number of qualified Midwives every year, and on the whole, private Midwives charge moderate fees, so that usually cases that were self-attended were those where the multiparous mothers went into precipitate labour without having time to summon skilled aid, or were those living in remote kampongs and occurring in the middle of the night.

HOME VISITING

With this increase in the number of births, there was, naturally, a consequent increase in the volume of work in both clinics and home visiting. The total number of visits paid by Sisters and Health Visitors was 120,941 compared with 112,387 in 1952—i.e. an increase of 18,554 visits. In the case of visiting of infants up to 1 year of age (*see* III) although the actual number of visits was about 4,000 more than in 1952, the percentage of total births visited was actually a little less, which shows that our staff is inadequate to deal with the increased number of babies requiring visiting. Each Health Visitor can visit only a certain number of cases per day, and even the 20—25 that she is allotted, can be dealt with only at the sacrifice of thoroughness.

CLINIC ACTIVITIES

The increase in baby consultations in the clinics was 20,801. 64.4 per cent of these were for treatment of various ailments, the more serious of which were referred to General Hospital for hospitalization. The Maternity and Infant Welfare Department must expect to continue to function as treatment as well as health advisory centres until such time as the hospital develops and extends their special paediatrics facilities, and until the public standard of living and education have reached the stage when the ways of maintaining positive health are appreciated and able to be carried out.

Exceptions to the general upward trend in numbers were:—

1. Toddler attendances, which decreased from 27,215 to 11,682 as there was some doubt as to whether our duties should extend beyond the 1 year olds. As a consequence, toddlers were referred to the General Hospital and Kandang Kerbau Hospital Out-patient Departments. In the latter months of the year toddlers were attended to where they had been regularly attending our clinics as infants, or were accompanying a new baby, and it was inconvenient for the mother to be referred to wait about in the Hospital Out-patient Departments having hung around our clinics for the better part of a morning.
2. A.P.T. inoculations—the total number of which dropped from 28,497 in 1952 to 20,284 in 1953. This may be accounted for by the publicity campaign in 1952 which was moderately successful in stirring up the interest of parents; but when the propaganda was not sustained throughout 1953, the public become apathetic again, except when persuaded

individually by the Maternity and Infant Welfare staff. This is proved by the maintenance in numbers of those under 1 year who were inoculated (i.e. 12,908 in 1953 and 12,743 in 1952) who received personal persuasion both from clinic staff and home visitors—whereas number of toddlers inoculated dropped from 48,917 in 1952 to 7,376 in 1953 as they were not receiving the benefit of our Maternity and Infant Welfare services (*see* above 1) to the same extent as before.

3. Family Planning New cases—dropped by 53 per cent, from 882 to 468. As we were short staffed by two Health Visitors for the greater part of the year, the hard pressed Health Visitors had no time to advise mothers of the existence of this service as it meant having to explain principles of Family Planning in great detail which would take up over 10—15 minutes of their time for each individual patient. This they obviously could not manage in the time at their disposal if they had to talk about infant feeding and management, and values of A.P.T. inoculations as well, and finish the number of cases allotted to them. The number of revisits of old cases and for rechecking however showed a slight increase from 1,187 in 1952 to 1,204 in 1953.

After the two big fires in Geylang area, our Health Visitors were called upon to organize the milk feeding of infants, toddlers, the old and the sick, when it was seen that several cases of gastroenteritis had occurred due to unhygienic methods and wrong dilution of milk preparation. In both the Lorong 3 godown and at the Badminton Hall, 3 shifts of 2 Health Visitors each were put on duty and attended until the fire victims were disposed of. In addition, at the Lorong 3 godown, in order to avert the possibility of diphtheria breaking out among the fire victims living under refugee conditions, A.P.T. immunization was instituted until all children had been inoculated.

MAGGIE LIM,
Senior Assistant Health Officer,
Maternity and Infant Welfare Department.

MIDDLETON HOSPITAL

TABLE 1 below shows the number of admissions, discharges, deaths, etc. during the year.

Table 1

Diseases	Remaining 31–12–52	Admitted	Dis-charged	Died	Remaining 31–12–53
Small-pox	..	..	..	..	..
Cholera	..	..	..	..	..
Plague	..	..	..	..	..
Chicken-pox	13	836	833	..	16
Measles	..	117	112	2	3
Diphtheria	21	332	282	47	24
Diphtheria (contact carriers) ..	1	47	45	..	3
Meningococcal-Meningitis ..	..	4	3	1	..
Acute Anterior Poliomyelitis ..	40	41	42	5	34
T. B. Meningitis	..	3	2	1	..
Enteric Fever	9	91	92	2	6
Paratyphoid Fever	..	3	3	..	..
Tropical Typhus	..	4	4	..	..
Amoebic Dysentery	1	134	129	2	4
Bacillary Dysentery	..	25	25	..	..
Clinical Dysentery	1	16	16	1	..
Diarrhoea-Enteritis and Gastro-Enteritis	1	39	38	..	2
Acute Tonsillitis	2	83	81	..	4
Mumps	..	9	9	..	..
Erysipelas	..	1	1	..	..
Whooping Cough	..	7	7	..	..
Other Diseases	..	75	62	11	2
Typhoid Carriers	..	76	76	..	..
Observations	1	106	105	..	2
Total ..	90	2,049	1,967	72	100

ADMINISTRATION AND FINANCE

This institution, as in previous years, is jointly administered and financed by the City Council and the Government.

DANGEROUS INFECTIOUS DISEASES

There was no case of small-pox, cholera or plague.

ENTERIC FEVER

Ninety-one cases of typhoid fever were admitted during the year and with 9 cases remaining on the 31st December, 1952, a total of 100 cases were treated. Two cases died, a case fatality rate of 2 per cent, a new low record.

There was no outbreak of the disease, the number of admissions being evenly distributed throughout the year.

DIPHTHERIA

332 cases of diphtheria were admitted this year and with 21 cases remaining at the end of 1952, a total of 353 cases were treated. Of the 332 cases admitted, 47 died, a case fatality rate of 14.1 per cent. 16 cases died within 24 hours after admission.

The operation of tracheotomy was performed on 103 cases or 31 per cent of the total admissions, an appalling figure, i.e. 1 in every 3 cases admitted was with symptoms of severe laryngeal obstruction. Of these 103 cases operated on, only 20 died after operation, i.e. 19.4 per cent.

Eighty-four cases were from the Rural area.

Besides, the above clinical cases, forty-seven contact diphtheria carriers with positive throat swabs for the diphtheria bacillus, were also admitted for isolation and treatment.

Table 2

Types of Cases	Admissions	Deaths
Laryngeal and Tracheal	106	40
Nasopharyngeal	57	7
Faucial or Tonsillar	163	..
Nasal	6	..
Total ..	332	47

Table 3

ADMISSIONS AND DEATHS BY NATIONALITIES

Race	Admissions	Deaths
Europeans	1	..
Eurasians	4	..
Indians	10	3
Chinese	301	43
Malays	15	1
Others	1	..
Total ..	332	47

Table 4

ADMISSIONS AND DEATHS BY AGE GROUPS

Age	Admissions		Deaths	
0– 1 year	17	245 (73.8%)	7	44 (93.6%)
1– 2 years	41		6	
2– 3 years	61		8	
3– 4 years	56		10	
4– 5 years	34		8	
5– 6 years	36		5	
6– 7 years	23	87 (26.2%)	1	3 (6.4%)
7– 8 years	12		1	
8– 9 years	14		1	
9–10 years	8		..	
10–15 years	23		..	
15–20 years	4		..	
Above 20 years	3		..	
Total ..	332		47	

A number of cases, suspected of diphtheria, were admitted but on investigation, they were diagnosed as follows:—

Bronchitis, Broncho–pneumonia	17 cases
Asthma	5 cases
Acute Tonsillitis	83 cases

Following a case of diphtheria among the 150 children in Mount Erskine Social Welfare Home, all the children were Schick tested.

The results are shown in Table 5.

Table 5

Age Groups	MALES			FEMALES		
	Total Tested	Schick Positive	Schick Negative	Total Tested	Schick Positive	Schick Negative
Years						
5 plus	1	..	1	2	1	1
6 plus	7	4	3	3	..	3
7 plus	24	9	15	25	9	16
8 plus	11	2	9	6	3	3
9 plus	5	2	3	6	2	4
10 plus	13	3	10	8	2	6
11 plus	8	1	7	10	3	7
12 plus	9	..	9	7	2	5
13 plus	4	..	4	1	..	1
Total ..	82	21	61	68	22	46

Out of 150 children tested, 43 were Schick positive (28.7 per cent). All the children tested were 5 years and over. The results showed a high level of immunity among them which confirmed quite well, with the high incidence of diphtheria cases among the children of age groups below 6 years as shown in Table 4, i.e. 73.8 per cent admissions were below 6 years and only 26.2 per cent were above this age.

TROPICAL TYPHUS

Three cases of Scrub typhus (O.X.K. type) and one case of Urban typhus (O.x.19 type) were treated.

MEASLES

One hundred and seventeen cases were treated with only 2 deaths from Broncho-pneumonia.

DYSENTERY

Table 6

Dysentery	Cases	Deaths
Amoebic	134	2
Bacillary	25	..
Clinical	16	1
Total ..	175	3

Of the twenty-five cases of Bacillary Dysentery, twenty were type Flexner and five type Sonne.

Although 175 cases were diagnosed as dysentery, there were a considerable number of cases sent to this hospital with the history of frequent stools, or blood and mucus in the stools, which turned out to be other than dysentery. Of these, 78 cases were simple diarrhoea with no pathogenic organisms isolated, and 14 with ascariasis.

ACUTE ANTERIOR POLIOMYELITIS

Table 7

ADMISSIONS BY MONTHS

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Cases ..	2	1	4	4	3	2	12	1	4	1	1	6	41
Died ..	..	..	1	1	..	..	..	1	..	..	1	1	5

Table 8

AGE GROUP, SEX DISTRIBUTION AND TYPES OF CASES OF POLIOMYELITIS

Age		0–1 year		1–2 years		2–5 years		5–10 years		10–15 years		15–20 years		20–30 years		30–40 years		Total	
Sex		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Paralytic ..	Cases	4	5	7	..	6	6	5	..	1	1	1	..	3	1	..	..	27	13
	Died	..	..	..	..	1	..	1	..	..	1	..	..	1	1	..	..	3	2
Non-Paralytic ..	Cases	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1
	Died	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total ..	Cases	4	5	7	1	6	6	5	..	1	1	1	..	3	1	..	..	27	14
	Died	..	..	..	..	1	..	1	..	..	1	..	..	1	1	..	..	3	2

Table 9

Race	Admissions		Deaths	
	M.	F.	M.	F.
Europeans	2	1	1	1
Eurasians	..	..	..	..
Indians	2	2	..	..
Chinese	21	10	2	1
Malays	2	1	..	..
Others	..	..	..	..
Total ..	27	14	3	2
Grand Total ..	41		5	

A total of forty-one cases was admitted with five deaths. Two Bulbar cases were put into the mechanical respirators and both died. The disease is endemic in this country as shown in Table 7 and no outbreak of the disease occurred during the year.

A daily average of thirty-five cases in-patients were receiving physiotherapy treatment.

Table 10

NATIONALITIES AND DAYS IN HOSPITAL

	REMAINING 1952		ADMITTED 1953		TOTAL	
	No. of Patients	No. of Days	No. of Patients	No. of Days	Total No. of Patients	Total No. of Hospital Days
Europeans	1	2	19	122	20	124
Eurasians	3	215	56	540	59	755
Indians	20	1,674	586	5,761	606	7,435
Chinese	61	5,973	1,210	19,437	1,271	25,410
Malays	5	877	173	371	178	1,248
Others	..	..	5	43	5	43
Total ..	90	8,741	2,049	26,274	2,139	35,015

HOSPITAL IMPROVEMENTS IN 1953

Completed installation of a self-starting electric power generator to supply independent electricity to all the iron lungs and the operating theatre.

The mechanized steam laundry and buildings are under construction and will be completed early in the new year.

Completed installation of an overhead service water tank of 14,000 gallons capacity and will be in service early next year.

A block of Singapore Improvement Trust Flats in Norfolk Road was acquired for staff quarters.

Completed construction and occupation of seven quarters for ambulance drivers and fitters.

ACKNOWLEDGEMENTS

We are grateful to the followings:—

The British Red Cross Society for their interests and gifts for the polio children.

The Coronation Celebration Committee for their financial contributions, gifts and organized bus rides for the post-polio children during Coronation week.

Professors E. S. Monteiro, G. A. Ransome and J. A. P. Cameron for their services as consultants to this hospital.

In conclusion, I wish to place on record my appreciation of the willing co-operation and service of the staff during the year.

NG SEE YOOK, L.M.S. (S'pore), D.P.H. (Lond.),
Medical Superintendent, Middleton Hospital,
Singapore.

CITY MARKETS

UNSOUND FOODSTUFFS

5,194 heads of poultry, 15,525 eggs, 120 lb. of mutton, and 235,305 katties (approximately 140.4 tons) of unsound foodstuffs were removed from the City markets and delivered to the City incinerators for destruction.

PUBLIC WEIGHING SCALES

Avery Spring Balances with a maximum capacity of 28 lb. were maintained in good order for public use.

PUBLIC TELEPHONES

Public telephones were installed in Orchard Road, Telok Ayer and Peoples' Park markets.

REVENUE FROM FISH AUCTION

Revenue from the 5 per cent commission on Fish Auction Sales showed a decrease over the previous year. This was due to a slight decrease in the prices of fish although the fish landed for auction showed a slight increase.

TABLE *A*

Market	Period	Quantity Landed and auctioned	Total Auction Value	Total of 5% commission collected
		Kattis	$ c.	$ c.
Ellenborough	1953	6,578,831	3,755,080 00	187,754 00
Clyde Terrace	1953	2,655,504½	1,354,107 00	67,705 35
Total ..	..	9,234,335½	5,109,187 00	255,459 35

TABLE *B*

TOTAL REVENUE

Market	*1953*
1. Clyde Terrace	135,611 35
2. Kandang Kerbau	33,277 65
3. Orchard Road	29,824 38
4. Sims Avenue	11,650 00
5. Grange Road	4,637 20
6. Ellenborough	254,540 20
7. Telok Ayer	36,913 00
8. Maxwell Road	22,057 70
9. Peoples' Park	11,786 00
	540,297 48

RETURNS

Daily and weekly returns were made to the Department of Fisheries showing the weight, place of origin and prices of fish passing through the Clyde Terrace and Ellenborough Markets. Monthly returns of the Average Market Prices were also made to the Department of Statistics, Singapore.

I attach the returns showing the quantity of unsound foodstuffs destroyed and a summary of the vacant stalls as at 31st December, 1953.

KOH CHENG KHIANG, CERT. R.S.I.,
Acting Market Inspector.

SUMMARY OF UNSOUND FOODSTUFFS DESTROYED

FOR THE YEAR 1953

Market		FISH				MEAT			VEGETABLES AND FRUITS				POULTRY		Miscel-laneous
		Fresh	Shell	Boiled	Salted	Beef	Mutton	Pork	Fresh Vege-tables	Dry Vege-tables	Salted Vege-tables	Fresh Fruits	Live-stock	Eggs	
		Kattis	Kattis	Kattis	Kattis	Kattis	Lb.	Kattis	Kattis	Kattis	Kattis	Kattis	Heads	Tens	Kattis
Clyde Terrace ..		4,985	75	..	..	..	..	..	29,630	..	..	2,577	719	54	..
Ellenborough ..		14,820	2,235	..	..	..	..	..	11,550	13,100	..	2,340	571	581	1,250
Telok Ayer ..		..	1,662	..	..	..	..	..	48,380	30,545	..	8,297	171	158	1,855
Kandang Kerbau ..		1,039	1,795	..	451	..	..	..	4,065	..	..	3,924	411	407	..
Orchard Road ..		346	6,214	..	..	288	..	..	4,448	..	..	9,115	95	..	1,048
People's Park ..		..	50	..	..	37	..	90	14,150	..	..	365	2,124	..	..
Maxwell		1,391	818	..	..	226	120	205	3,831	..	..	..	915	245	..
Grange Road ..		371	..	..	..	..	..	..	1,157	..	..	1,429	..	543	743
Sims Avenue ..		604	391	..	..	..	..	..	2,273	..	65	106	188	53.2	1,499
Total	In Kattis ..	23,556	13,240	..	451	551	120	295	119,484	43,645	65	28,153	5,194	1,552.5	6,395
	In Tons ..	14.02	7.88	..	.26	.32		.17	71.1	25.9	.038	16.7			4.4

SUMMARY OF VACANT SLABS AND STALLS AS AT 31st DECEMBER, 1953

Description	Clyde Terrace	Ellen-borough	Telok Ayer	Kandang Kerbau	Orchard Road	People's Park	Maxwell	Grange Road	Sims Avenue	Remarks
Fish . .	23	2	3	. .	4	19	30	4	1	
MEAT:—										
(*a*) Beef	. .	. .	. .	. .	. .	. .	. .	. .	. .	
(*b*) Mutton	. .	. .	. .	. .	. .	3	. .	. .	. .	
(*c*) Pork	. .	. .	. .	. .	. .	16	. .	. .	1	
VEGETABLES:—										
(*a*) Fresh	. .	. .	. .	. .	. .	. .	. .	. .	. .	
(*b*) Salted	. .	. .	. .	. .	. .	. .	37	2	1	
(*c*) Dry	. .	. .	. .	. .	. .	1	. .	1	. .	
(*d*) Dry and Salted	1	. .	. .	. .	. .	. .	. .	. .	. .	
POULTRY:—										
Livestock	. .	7	. .	. .	. .	. .	2	. .	. .	
Eggs	. .	. .	. .	. .	. .	. .	. .	. .	. .	
Dry-goods	1	. .	. .	. .	. .	3	5	1	2	
MISCELLANEOUS:—										
Beancake	. .	. .	. .	. .	. .	. .	6	. .	. .	
Hawkers	. .	. .	. .	. .	. .	. .	. .	. .	. .	
Dressed Duck	. .	. .	. .	. .	. .	1	2	. .	. .	
Money-changer	. .	. .	. .	. .	. .	. .	. .	. .	. .	
Currystuff	. .	. .	. .	. .	. .	1	. .	. .	. .	
Hawkers, Eating—Large	. .	. .	. .	. .	. .	. .	. .	. .	. .	
Iceblock	. .	. .	. .	. .	. .	. .	. .	. .	. .	
Soda Fountain	. .	. .	. .	. .	. .	. .	. .	. .	. .	
Provision	. .	. .	. .	. .	. .	. .	. .	. .	. .	
Total . .	25	9	3	. .	4	44	82	8	5	

CITY ABATTOIRS

During the year 393,061 animals were slaughtered in the Abattoirs; 327,853 were swine, 5,568 oxen, 1,101 buffaloes, 11 horses, 56,506 sheep and 2,022 goats.

135 swine, three oxen, seven buffaloes, 106 sheep and three goats died in the pens.

Seventy-four swine died in the depot.

Thirty-one swine, twelve oxen, four buffaloes and sixty-two sheep carcases were totally condemned.

J. B. QUAYS,
Acting Superintendent of Abattoirs.

——	Swine	Oxen	Buffaloes	Horses	Sheep	Goats
Admitted for slaughter, 1953 ..	327,975	5,547	1,108	11	56,638	2,023
Slaughtered 1953	327,853	5,568	1,101	11	56,506	2.022
Died in pens	135	3	7	..	106	3
Died in depot	74	..	..	..	..	..
Carcases condemned ..	31	12	4	..	62	..
Diseased organs etc., condemned and destroyed in tons ..	9.4	4.2	1.9	..	3.1	0.05

TOTAL RECEIPTS FOR THE YEAR 1953

	$ c.
Fees for slaughter at Cattle section	19,998 00
Fees for slaughter at Sheep section	58,661 00
Fees for slaughter at Pig section	655,950 00
Fees for storage at French Road Depot	9,854 90
Fees for inspection of wild boar carcases	170 00
Receipts as pen rents (all slaughter houses)	23,446 60
Receipts for sale of pigs' bristles	180 00
Receipts for sale of blood	420 00
Total Receipts for the year 1953	768,680 50
Total Receipts for the year 1952	759,019 10
Special slaughtering licenses issued during the year 1953 (2 swine at $10 each and 23 sheep and 18 goats at $5 each) ..	225 00

ANIMALS SLAUGHTERED MONTHLY IN CITY ABATTOIRS DURING THE YEAR 1953

——	Swine	Oxen	Buffaloes	Horses	Sheep	Goats
January	28,032	422	124	..	4,995	156
February	26,598	316	127	..	4,711	145
March	27,211	414	167	1	5,543	159
April	26,194	430	95	2	5,148	150
May	27,629	554	65	..	4,712	200
June	27,613	531	151	1	3,629	208
July	28,364	464	48	2	4,136	158
August	29,737	549	68	1	4,998	250
September	27,089	430	88	1	4,314	164
October	26,830	465	78	..	4,384	137
November	25,815	486	44	2	5,010	161
December	26,741	507	46	1	4,926	134
Total slaughtered during 1953 ..	327,853	5,568	1,101	11	56,506	2,022
Total slaughtered during 1952 ..	320,076	4,248	2,314	4	57,743	2,288

CARCASES TOTALLY CONDEMNED DURING THE YEAR 1953

——	Swine	Oxen	Buffaloes	Sheep	Goats
Cas. Lymphadenitis	..	..	..	1	..
Cysticercosis	13	..	..	..	..
Dropsy	..	3	1	..	..
Extreme Emaciation	..	..	..	1	..
Generalized Bruising	..	1	..	..	..
Jaundice	2	..	1	18	..
Pyrexia	16	..	1	37	..
Septicaemia	..	..	..	1	..
Septic Peritonitis	..	..	1	..	..
Septic Pneumonia	..	1	..	..	..
Transit Generalised Fever ..	..	..	..	4	..
Tuberculosis	..	7	..	..	..
Total condemned during 1953 ..	31	12	4	62	..
Total condemned during 1952 ..	25	28	12	85	6

SANITARY INSPECTORS SECTION

STAFF

THE DUTIES of the Chief Sanitary Inspector, who was on leave prior to retirement from the 1st January, 1953 to the 30th August, 1953 were carried out by the Divisional Sanitary Inspector (North). After the 30th August, 1953, the Divisional Sanitary Inspector (North) was appointed the Chief Sanitary Inspector. The vacant post of Divisional Sanitary Inspector caused by this promotion was filled by the promotion of one of the Senior Sanitary Inspectors on the 1st November, 1953.

The post of one Senior Sanitary Inspector which was vacant from January 1953, due to the promotion to Divisional Sanitary Inspector of one of the Senior Sanitary Inspectors in the year previous was filled by the promotion of one of the qualified Sanitary Inspectors on the 1st May, 1953.

The additional post of Food and Drugs Inspector created from the 1st January 1953 was filled by the promotion of one of the qualified Sanitary Inspectors on the 1st May, 1953.

Three probationary Sanitary Inspectors attended as candidates for a period of 9 months, the Associate of the Royal Sanitary Institute course which began on the 1st February, 1953. All the candidates were successful in the examination held in November 1953.

Of the three successful candidates, one was transferred to the City Abattoirs to fill a vacancy as Assistant Superintendent of the Abattoirs in December 1953.

One qualified Sanitary Inspector attached to the Anti-mosquito Department, was transferred to the Sanitary Department, for Sanitary Inspector's duties in October 1953.

The staff as at 31st December, 1953 is as follows:—

C.S.I.	D.S.Is.	S.S.Is.	F. and D.Is.	Q.S.Is.	P.S.Is.	Total
1	2	3	3	19	10	38

Summary of staff changes throughout the year is shown on Table *A* in Appendix *I*.

SANITARY WORK

House to House Inspection

Sixty-nine days were spent on house to house inspection of a routine nature. 777 houses were inspected.

Kampong Inspection

Kampong inspections were carried out in connection with:—

(*a*) Kampong Sanitation;
(*b*) Enforcement of the Swine By-laws;
(*c*) Checking new huts within the City area;
(*d*) Checking new structures other than huts in dwelling houses within the City area.

With regard to (*c*) and (*d*), 298 memoranda were received in this connection from the City Architect and Building Surveyors Department, for comments as to whether any of the structures constituted a grave health risk.

220 days were spent during which 3,362 premises were inspected.

Complaints

A total of 907 complaints were received from the public involving 10.739 visits.

Complaints	No. of Complaints	Primary Visits	Revisits	Total visits and revisits
Mosquito	570	4,051	4,463	10,739
Other	337	2,225		

Infectious Diseases

Polio-myelitis	Diphtheria	Chicken-pox	Typhus	C.S.M.	Leprosy	Typhoid
30	245	713	9	5	124	90

In connection with the above, the following work was carried out.

Diphtheria Throat Swabs	Removal to Middleton Hospital	Barrier spraying re Poliomyelitis	Total Visits
1,315	344	27	1,979

Notices

The following is a summary of notices served.

Type of Notice	B/f	Served	Total	Complied with	Cancelled	C/f
Intimations ..	53	188	241	135	51	55
Limewash	71	308	379	323	..	56
Nuisance Notice ..	25	48	73	39	7	27
Abatement Order ..	3	3	6	1	2	3
Total ..	152	547	699	498	60	141

Food and Drugs

760 samples were taken by the Sanitary staff for chemical analysis of which 388 samples were taken by the Sanitary Inspectors and the remaining 372 by the Food and Drugs Inspectors. Besides these 88 samples were taken for bacteriological examination and 36 samples were taken for tests by the Anti-mosquito Department. For details, please see Appendix *II*, Table *A*.

Routine inspection of premises in connection with unsound food was carried out by the Food and Drugs Inspectors involving 6,186 visits. For summary of foodstuffs surrendered and destroyed, please see Table *B* of Appendix *II*.

Inspection of Premises

Inspections carried out on other classes of premises not included in the above, total 33,781 visits as follows:—

Sauce Factories	245
Oilmills	130
Sawmills	83
Places of Entertainment	303
City Markets	752
Private Markets	285
Coffee Grinding Mills	49
Printing Press	335
Licensed Premises	21,666
Public Houses	739
Native Passenger Lodging Houses	92
Labour Ordinance	1
Daily Fines	136
Serving Notices	607
Inspecting Notices	1,304
Cautioning Cases	375
Measuring Schools	15
Using Night-soil as Manure	28
Unlicensed Premises	1,752
Goldsmiths	39
Dry Cleaners	31
Smoke Observations	6
Foundries	1
Other Premises	4,807
	33,781

In connection with the visits to:—

(*a*) Schools;

(*b*) Places of Entertainment;

(*c*) Printing Presses;

(*d*) Public Houses;

(*e*) Native Passenger Lodging Houses,

these inspections were made generally for the purpose of putting up recommendations with regard to the licensing, registration or renewal of licences under the control respectively of (1) Department of Education (2) Police Department (3) Colonial Secretary (4) Customs Department (Board of Licensing Justices) (5) Criminal Investigation Department (Special Branch).

During the year, 204 plans were received from the City Architect and Building Surveyors Department, for comments generally with regard to the drainage, sanitary accommodation, working facilities and the siting of septic tanks including the discharge of the effluent. The number of inspections made in this connection are included under the heading of 'Other Premises'.

Reports to other Departments

A total of 569 reports were made to various departments in the City Council with regard to irregularities observed during the course of the Sanitary Inspectors' rounds.

City Cleansing Department	136
City Sewerage Department	68
City Building Department	284
Other Departments	81
	569

Offences and Prosecutions

519 summonses were applied for all types of infringements of the Ordinance and By-laws.

Court proceedings took up 233 man working days. There were 526 prosecutions with 456 convictions. 16 summonses were withdrawn and 54 not served. Total fines amounted to $20,745.85.

Meat Inspection

Owing to the shortage of the staff at the City Abattoirs, three Sanitary Inspectors were seconded for Abattoir duties as follows:—

(*a*) One qualified Sanitary Inspector on a six monthly roster for full time duty as Assistant Superintendent of the Abattoirs.
(*b*) Two Sanitary Inspectors for meat inspection nightly at the Pig Abattoir on a weekly roster.

With regard to (*a*), this procedure ceased in December 1953 with the permanent transfer of one qualified Sanitary Inspector to that department.

In addition, Sanitary Inspectors were sent to the Abattoirs for duty for various periods during the year to do relief duty, as a result of absence on vacation and sick leave among members of the existing staff in that department.

A total of 884 man working days were spent.

GENERAL

During the year there were 9,220 man working days which were spent as follows:—

Sanitary Work	Abattoirs	Burial Grounds	Sick Leave	Infectious Diseases Duties	Vacation Leave
7,375	884	21	55	365	520

The total number of visits during the year covering all categories of work was 56,824.

L. A. MARCUS,
Chief Sanitary Inspector.

APPENDIX *I*

TABLE *A*

SUMMARY OF STAFF CHANGES IN 1953

Month	C.S.I.	D.S.I.	S.S.I.	F. and D.I.	Q.S.I.	P.S.I.	Total
January to April ..	1	2	3	2	18	13	39
May	1	2	4	3	16	13	39
August to September ..	1	1	4	3	16	13	38
October	1	1	4	3	17	13	39
November	1	2	3	3	20	10	39
December	1	2	3	3	19	10	38

APPENDIX *II*

TABLE *A*

SAMPLES TAKEN FOR CHEMICAL ANALYSIS

Pepsi-Cola	2	Coca-Cola	3
Mushrooms	15	Almond Syrup	1
Soda Water	86	Vegetable Ghee	2
Whisky	6	Gentian Violet	2
Milk	145	Orange Kist	3
Cherry Colouring Powder ..	1	Coffee Mixture	50
Green Colouring Powder ..	1	Unsweetened Condensed Milk ..	1
Yellow Colouring Powder ..	2	Canned Abalone	5
Red Colouring Essence	1	Brown Bread	1
American Cream Soda Essence ..	1	White Bread	3
Orange Crush Essence	1	Well Water	83
Banana Essence	3	Dried Mushrooms	3
Strawberry Crush Essence ..	1	Stout	1
Rose Flavouring Essence ..	1	Sardines	20
Syrup	1	Orange Cordial	1
Lemon Draught	1	Canned Tomatoes	1
Orange Crush	13	Orange Smash	2
Destrine	1	Ice Cream	22
Pure Pepper	1	Tinct. Ginger Fortis	2
Pepper Mixture	6	Cooking Product	5
Tinct. Ginger	2	Cooking Fat	2
Compound Tinct. Rhubarb ..	1	Whole Meal Bread	1
Tinct. Ipecacuanha	10	Coriander Powder	11
Tinct. Gentian Co.	3	Curry Powder	9
Lemonade	5	Tomato Chutney Sauce ..	1
Tinct. Cardamon	10	Sweetened Cond. Skimmed Milk ..	3
Friars Balsalm	7	Sweetened Condensed Milk ..	1
Tinct. Orange	20	Unsweetened Evaporated Milk ..	1
Glycerine	9	Lingat de foie gras	1
Gingerly Oil..	16	Barley Water	1
Canned Vienna Sausages ..	1	Canned Sliced Bacon	1
Canned Frankfurters Sausages ..	1	Lime Juice	1
Carried forward ..	374	*Carried forward* ..	234

TABLE *A—continued*

Brought forward	374
Canned Black Pudding	1
Canned Pork Luncheon Meat	1
Canned Cauliflower	2
Glycerine Borax	5
Peanut Oil	1
Canned Guavas	1
Pineappleade	1
Red Plums	1
Colouring Matter	1
Orange Juice	2
Strawberries in Syrup	3
Vegetable Soup	1
Jam	1
Black Berries in Syrup	1
Canned Pilchards	1
Canned Peas	1
Roasted Maize	1
Sweets	13
Roasted Wheat	1
Macaroni with Cheese Sauce	1
Orange Squash	1
Almond Syrup	1
Worm Powder	3
Peroxide Ointment	1
Cherry Flavouring Essence	1
Skimmed Milk	3
Bireleys Fruit Juice	4
Metal Alloy Moulds	5
Vinegar	1
Grape Fruit	2
Tinct. of Iodine	1
Mercurochrome	1
Pisang Ambon Syrup	1
	439

Brought forward	234
Banana Squash	1
Lime Juice and Soda	2
Oatfel	1
Pure Olive Oil	2
Cond. Full Cream Milk	3
Coffee	12
Canned Plums	1
Zinc Oxide Ointment	2
Camphorated Oil	2
Peeled Shrimps	1
Section Pig Skin	3
Tinned Pork Sausages	1
Pate de fois gras	1
Frozen sausages	1
Soya Bean Sauce	16
Cream	1
Groundnut Oil	1
Tea Dust	2
Cherry Cider	1
Bottled Fruits in Syrup	1
Sweetened Almond Powder	1
Coriander Mixture	3
Plum Water	1
Honey	1
Quinine Tablets	3
Citronella Oil	2
Kajuput Oil	1
Rice Vinegar	3
Liquid Paraffin	3
Mission Orange	2
Henpen-seed Oil	1
Orange Syrup	1
	321

SAMPLES TAKEN FOR BACTERIOLOGICAL EXAMINATION

Ice Cream	25
Popsicle	12
Mission Orange	1
Well Water	50

SAMPLES TAKEN FOR ANTI-MOSQUITO DEPARTMENT

Well Water	36

TABLE *B*

SUMMARY OF FOODSTUFFS SURRENDERED AND DESTROYED

Crates	Cases	Boxes/ Packages	Tins	Bottles/Jars	FOOD BY WEIGHT	
					Kattis	Pounds
..	..	217	39,569	11,780	379	2,338½

RETURN OF LICENCES ISSUED UNDER THE FOOD SHOP BY-LAWS

DURING THE YEAR 1953

Nature of Licence		Per Annum	Number Issued	Cash Received	DETAILS OF LICENCES ISSUED												Re-issue
					For One Year	For One Month	For 2 Months	For 3 Months	For 4 Months	For 5 Months	For 6 Months	For 7 Months	For 8 Months	For 9 Months	For 10 Months	For 11 Months	
		$		$ c.													
BAKERIES	Syrup Making Shop ..	48	2	96 00	2	..	..	..	..	..	..	..	..	..	..	..	..
	Bakery	48	29	1,364 00	28	..	..	..	..	1	..	..	..	..	..	..	1
	Biscuit Factory	48	6	288 00	6	..	..	..	..	..	..	..	..	..	..	..	..
	Cake Shop	48	38	1,756 00	35	..	..	..	..	2	..	..	..	1	..	..	1
	Ice Cream Factory ..	48	5	180 00	3	1	..	..	..	..	..	..	1	..	..	..	..
BUTCHERS SHOPS, ETC.	Meat Shop	48	78	3,600 00	74	..	3	..	..	..	1	..	..	..	..	..	1
	Margarine Factory ..	48	2	96 00	2	..	..	..	..	..	..	..	..	..	..	..	..
	Mutton Shop	48	1	48 00	1	..	..	..	..	..	..	..	..	..	..	..	..
	Confectionery	48	1	48 00	1	..	..	..	..	..	..	..	..	..	..	..	..
	Pork Shop	48	22	1,056 00	22	..	..	..	..	..	..	..	..	..	..	..	..
EATING HOUSES ETC.	Ice Popsicles Manufactory ..	48	1	48 00	1	..	..	..	..	..	..	..	..	..	..	..	..
	Eating House	48	896	41,516 00	840	5	7	3	8	5	10	4	5	5	3	1	16
	Coffee Shop	48	156	7,324 00	147	..	..	..	..	2	2	1	..	3	..	1	1
	Iced Water and Cold Drinks ..	48	50	2,288 00	46	..	..	1	1	1	..	..	1	..	..	..	1
	Soda Fountain	48	12	532 00	11	1	..	..	..	..	..	..	..	..	..	..	..
	Food Caterer	48	1	48 00	1	..	..	..	..	..	..	..	..	..	..	..	..
Sweets Making Shop ..	.. .. ..	48	10	480 00	10	..	..	..	..	..	..	..	..	..	..	..	..
Aerated Water Factory ..	.. .. ..	48	15	572 00	11	1	2	..	..	..	1	..	..	..	..	..	1
Milk Sellers	.. .. ..	12	62	744 00	62	..	..	..	..	..	..	..	..	..	..	..	..
Restaurant	.. .. ..	48	312	14,416 00	290	1	4	2	1	2	3	2	..	7	..	..	5
Dairy Shop	.. .. ..	48	4	180 00	3	..	..	..	..	..	..	..	..	1	..	..	..
Food Shop	.. .. ..	48	23	1,076 00	22	..	..	..	..	1	..	..	..	..	..	..	1
Possession of Wild Boar Flesh	.. .. ..	48	4	180 00	3	..	..	..	..	..	..	..	..	1	..	..	..
	Total ..		1,730	77,936 00	1,621	9	16	6	10	14	17	7	7	18	3	2	28

RETURN OF LICENCES ISSUED UNDER THE OFFENSIVE TRADE BY-LAWS

DURING THE YEAR 1953

Nature of Licence	Per Annum	Number Issued	Cash Received	DETAILS OF LICENCES ISSUED												Re-issue
				For One Year	For One Month	For 2 Months	For 3 Months	For 4 Months	For 5 Months	For 6 Months	For 7 Months	For 8 Months	For 9 Months	For 10 Months	For 11 Months	
	$		$ c.													
Blachan Store	36	2	72 00	2	..	..	..	..	..	..	..	..	..	..	..	..
Brick Kiln	75	2	150 00	2	..	..	..	..	..	..	..	..	..	..	..	..
Charcoal Making	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Dye House	18	6	108 00	6	..	..	..	..	..	..	..	..	..	..	..	..
Drying and Sorting Fish	54	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Fruit Preserving	75	2	150 00	2	..	..	..	..	..	..	..	..	..	..	..	..
Importation of Meat	..	13	5,639 55	13	..	..	..	..	..	..	..	..	..	..	..	..
Knacker's Yard	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Lime Making	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Lye Making	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Laundry	12	296	3,552 00	296	..	..	..	..	..	..	..	..	..	..	..	..
Offal Boiling	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pottery Works	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Private Market	600	7	3,900 00	6	..	..	..	..	..	1	..	..	..	..	..	..
Rags and Bones Store	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sago Factory	75	4	300 00	4	..	..	..	..	..	..	..	..	..	..	..	..
Sauce Factory	18	21	358 50	18	..	..	..	..	..	2	..	..	..	..	1	1
Sheep or Goat Pen	18	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sick Receiving House	1	4	4 00	4	..	..	..	..	..	..	..	..	..	..	..	..
Soap Boiling	18	7	126 00	7	..	..	..	..	..	..	..	..	..	..	..	..
Sugar Boiling	75	2	150 00	2	..	..	..	..	..	..	..	..	..	..	..	..
Tannery	75	3	225 00	3	..	..	..	..	..	..	..	..	..	..	..	..
Oilmill	18	14	247 50	13	..	..	..	..	..	..	..	..	1	..	..	..
Sauce Mixture Factory	18	3	54 00	3	..	..	..	..	..	..	..	..	..	..	..	..
Coffee Roasting Factory	18	6	94 50	5	..	..	1	..	..	..	..	..	..	..	..	..
Refining Precious Metals by the Acid Process	18	10	180 00	10	..	..	..	..	..	..	..	..	..	..	..	..
CATTLESHEDS, PONYSTABLES, COWSHEDS																
9 Animals and Under per head @	1.50	1	7 50	1	..	..	..	..	..	..	..	..	..	..	..	..
10–14 Animals	15	1	15 00	1	..	..	..	..	..	..	..	..	..	..	..	..
15–24 Animals	22.50	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
25–50 Animals	37.50	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Over 50 Animals	75	1	75 00	1	..	..	..	..	..	..	..	..	..	..	..	..
Total		405	15,408 55	399	..	..	1	..	..	3	..	..	1	..	1	1

HEALTH DEPARTMENT

RETURN OF PROSECUTIONS FOR THE YEAR 1953

Offences		TOTAL					Remarks
		Prosecutions	Withdrawn	Not Served	Convictions	Fines	
						$ c.	
MUNICIPAL ORDINANCE							
Obstructions	Section 120	..	..	..	..	..	
Offensive matter flowing into Public Drain	,, 131	..	..	..	..	..	
Establishing a private market ..	,, 198	..	..	..	..	..	
Unlicensed Offensive Trades	,, 211	82	4	17	61	3,860 00	1 Police Case
Using night-soil/or urine as manure ..	,, 213	2	..	..	2	300 00	
Latrine etc. notice not complied with ..	,, 219	..	..	..	..	..	
Night-soil kept for more than 48 hours ..	,, 223	..	..	..	..	..	
Filthy premises	,, 233	23	1	..	22	550 00	
Limewash notice not complied with ..	,, 234	..	..	..	..	..	
Non-compliance of notice for the destruction of rats and mice	,, 235	..	..	..	..	..	
Non-compliance of notice of demolition order of insanitary dwelling ..	,, 236	..	..	..	..	..	
Allowing premises to be overcrowded ..	,, 237	..	..	..	..	..	
Non-compliance with Nuisance Notice ..	,, 246	11	1	..	10	245 00	
Non-compliance with Nuisance Order ..	,, 247	1	..	..	1	250 00	
Non-compliance with Closing Order ..	,, 247	..	..	..	..	..	
Non-compliance of order for demolition of house unfit for human habitation ..	,, 248	..	..	..	..	..	
Non-compliance with Well Notice ..	,, 254	..	..	..	..	..	
Opening Well without permission ..	,, 254	..	..	..	..	..	
Licence not exhibited	,, 381	..	..	..	..	..	
Breaches of Offensive Trades By-laws ..	..	..	..	..	..	..	
BY-LAWS SECTION 58 AND 211 M.O.							
Unlicensed Foodshops	..	141	3	8	130	5,930 85	1 Police Case
Unlicensed Milk Vendors	..	29	1	15	13	635 00	
Opening licensed premises during prohibited hours	..	1	..	..	1	10 00	

RETURN OF PROSECUTIONS FOR THE YEAR 1953—*continued*

Offences	TOTAL					Remarks
	Prosecutions	Withdrawn	Not Served	Convictions	Fines	
					$ c.	
BY-LAWS SECTION 58 AND 211 M.O.—*contd.*						
Conveying milk for sale without regulation bottles	..	..	..	..	..	
Failing to have name and address marked upon the vehicle/can	..	..	..	..	..	
Keeping Swine in a prohibited area	..	..	..	..	..	
Filthy Stables, Cowsheds etc.	..	..	..	..	..	
Breaches of the Foodshop By-laws	39	4	..	35	830 00	
MARKETS AND SLAUGHTER HOUSES						
Sellingvegetableswithin50yardsofmarket.. Section 198	..	..	..	..	..	
Unsound Food ,, 199	..	..	..	..	..	
Slaughtering Animals except in Abattoirs ,, 204	29	..	1	28	1,640 00	8 Police Cases
Market By-laws	92	..	..	92	1,280 00	
SALE OF FOOD AND DRUGS ORDINANCE						
Selling adulterated Milk .. Section 11–1	35	1	13	21	2,100 00	
Selling adulterated Coffee Mixture ,, 11–1	18	..	..	18	1,185 00	
Selling adulterated Coriander Powder ,, 11–1	5	..	..	5	725 00	
Selling adulterated Glycerine ,, 11–1	1	..	..	1	50 00	
Selling adulterated Tincture of Orange ,, 11–1	3	..	..	3	120 00	
Selling adulterated Tincture of Ipecauanha ,, 11–1	1	..	..	1	..	
Selling adulterated Gentian Violet Solution ,, 11–1	1	..	..	1	50 00	
Selling adulterated Coffee Mixture and bearing false label	1	..	..	1	50 00	
Selling pepper Mixture bearing a false label	1	..	..	1	350 00	
Selling adulterated Groundnut Oil and not bearing label or statement in English	1	..	..	1	50 00	

HEALTH DEPARTMENT—*continued*

RETURN OF PROSECUTIONS FOR THE YEAR 1953—*continued*

Offences	TOTAL Prosecutions	Withdrawn	Not Served	Convictions	Fines	Remarks
					$ c.	
SALE OF FOOD AND DRUGS ORDINANCE—*contd.*						
Selling food which did not bear a label in English containing the name of the Country where article was manufactured	1	1	..	..	..	
Selling Almond Syrup containing Saccharin ..	3	..	..	3	285 00	
Selling Barley Water containing Saccharin	1	..	..	1	50 00	
Selling food purporting to indicate Sardines which was not Sardines	1	..	..	1	50 00	
Selling food bearing a label that the contents was Vinegar which was not Vinegar	1	..	..	1	50 00	
Using Ghee in combination with a word Vegetable ..	1	..	..	1	100 00	
Q. AND P. DISEASE ORDINANCE						
Failing to report case of Infectious Disease Section 3	..	..	..	..	..	
Moving patient without permission .. ,, 19	..	..	..	..	..	
Exposing patient while suffering .. ,, 19	..	..	..	..	..	
Conveying patient in public vehicle .. ,, 24	..	..	..	..	..	
Failing to have child vaccinated .. ,, 43–1	1	..	..	1	..	
Failing to bring child for inspection .. ,, 44	..	..	..	..	..	
REGISTRATION BIRTHS AND DEATHS ORDINANCE						
Failing to Register Births .. .. Section 9	..	..	..	..	..	
Failing to Register Deaths .. .. ,, 13	..	..	..	..	..	

HEALTH DEPARTMENT—*continued*

RETURN OF PROSECUTIONS FOR THE YEAR 1953—*continued*

Offences		TOTAL					Remarks
		Prosecutions	Withdrawn	Not Served	Convictions	Fines	
						$ c.	
DESTRUCTION OF MOSQUITOES ORDINANCE							
Failing to comply with notice	.. Section 9-1	..	..	..	..	..	
Recovery of costs of work done	.. ,, 8·1	..	..	..	..	..	
Destroying Anti-malarial Works	.. ,, 15	..	..	..	..	..	

SUMMARY

Total Prosecutions	..	..	526
,, Withdrawn	..	..	16
,, Not Served	..	..	54
,, Convictions	..	..	456
,, Fines	..	..	$20,745.85

N.B.:—Costs are not included in the amount of fines.
Fees $227